

## Air-Conditioning Exposition

Visitors Wanted to See Units 'Work' and Asked Smart Questions



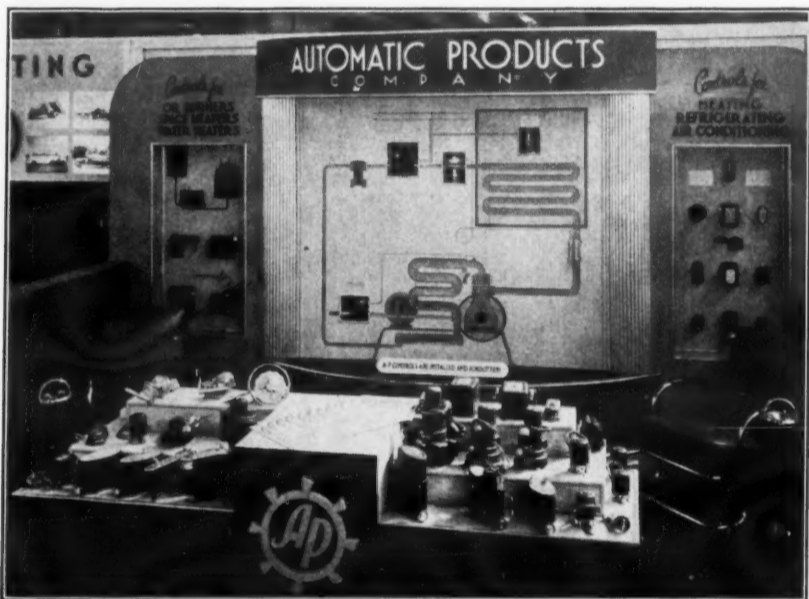
Kelvinator air-conditioning equipment occupied one of the largest exhibits at the Heating and Ventilating Exposition held last week in Chicago. In the left foreground is one of Kelvinator's largest condensing units for air-conditioning applications. Behind it a visitor learns about a store conditioner. At the far right a spectator evinces interest in floor-type units, which had glass fronts to show operating parts.

## Crosley's 1936 Refrigerator Seen by Department Store Men at Chicago Mart



Visitors at the First International Housewares Show in the Chicago Merchandise Mart last month were among the first to see the stylish new Crosley household models for 1936.

## Valves, Controls And other Refrigeration Parts Were Displayed at Exposition



Centerpiece of Automatic Product Co.'s exhibit showed the various uses of controls in an air-conditioning system. Expansion valves, refrigerant gas, and oil control valves, room thermostats, and other products were in the foreground.

## Carrier Executive



L. R. Boulware, recently elected vice president and general manager of Carrier Engineering Corp., addressed Carrier distributors at the Newark convention.

## Westinghouse Showed Conditioners, Compressors And New-Type Air Cleaners

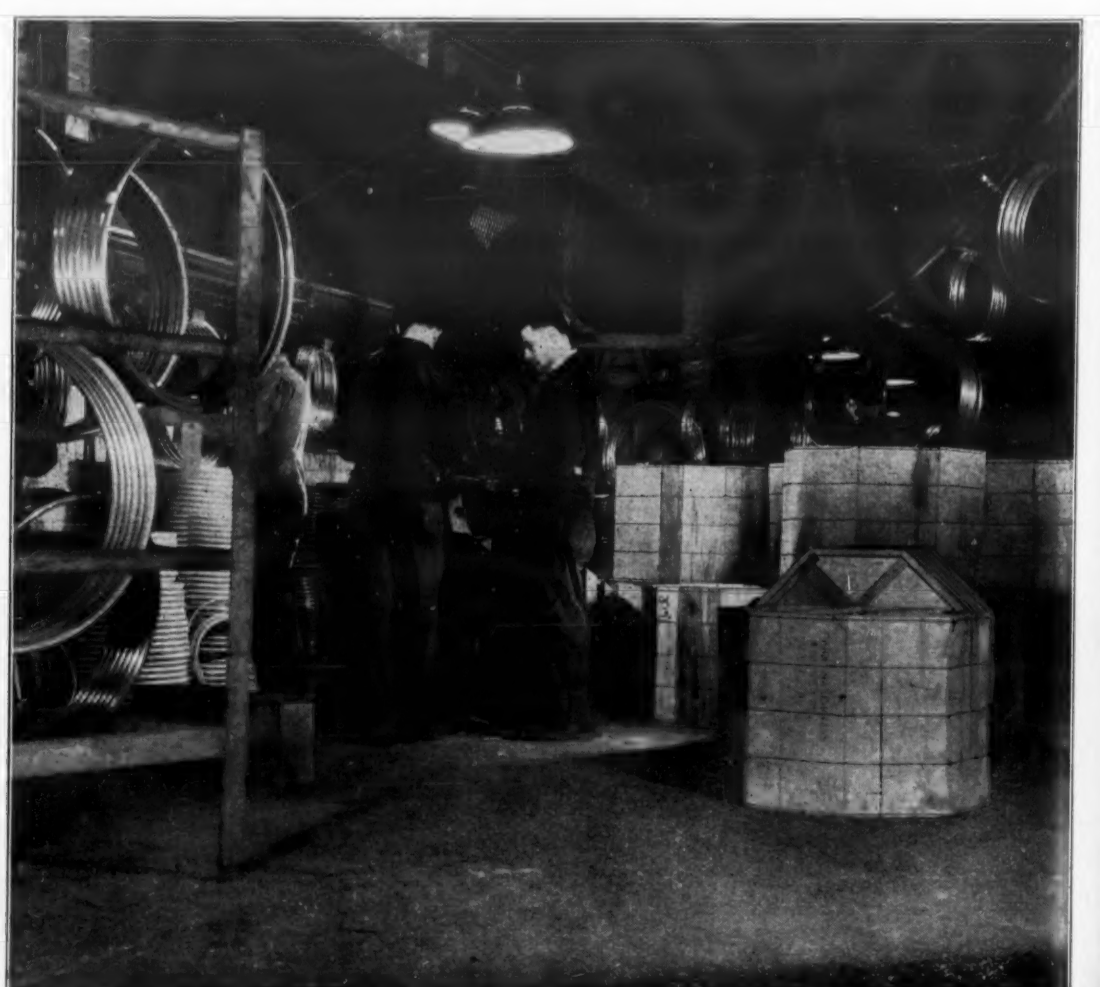


Various types of air conditioners and equipment which is used in air-conditioning systems were shown in the extensive Westinghouse display. Just discernible at the far left on the table is a working model of the new "electrostatic" air cleaner which Westinghouse has just introduced.

## Copper Tubing

Enormous quantities used for refrigeration, air conditioning

And all of it must be specially made, cleaned, dehydrated, and sealed. The pictures below were taken in the big plant of Wolverine Tube Co., Detroit. (1) Loading end of a large General Electric annealing furnace. (2) Inspection of the finished product before packing.



## REFRIGERATION NEWS

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DETROIT, MICHIGAN, FEBRUARY 12, 1936

Copyright, 1936, by  
Business News Pub. Co.THREE DOLLARS PER YEAR  
TEN CENTS PER COPY55 Case Makers  
Report '35 Sales  
Of 23,031 UnitsCommercial Refrigerator  
Manufacturers Show  
Sales Gain Over '34

CHICAGO—Fifty-five manufacturers reporting to Commercial Refrigerator Manufacturers Association sold 23,031 refrigerated display cases, sectional coolers, and commercial refrigerators during 1935, according to a summary compiled by Paul H. Sullivan, executive secretary of the association.

Dollar volume of sales by association members totaled \$10,698,190, and sales by the whole industry \$11,776,465, Mr. Sullivan estimates. The sales by CRMA members represent 85 per cent of the all-industry figure.

Last year's volume exceeded by \$938,181 the \$9,760,009 in sales reported by members of the association for 1934.

Sales by commercial refrigerator manufacturers maintained a constant level throughout the year, both in number and in dollar volume. The last six months of the year were slightly ahead of the first half-year in volume, showing a \$5,572,445 total, compared with \$5,125,745.

July and August sales figures were the highest in the last six months' period, the first month's total being \$1,049,007, and the second, \$1,055,076. Lowest month was December, when sales totaled \$803,168.62.

Sales for this month, however, were only 5.9 per cent below November's total of \$853,673.58, and were (Concluded on Page 20, Column 5)

1935 Commercial  
Machine Sales  
Total 117,533

DETROIT—117,533 commercial refrigeration units of less than 1 hp. capacity were sold during 1935 by the 19 companies which made monthly reports of their sales to the Commercial Refrigeration Section of the Refrigeration Division of National Electrical Manufacturers Association.

Sales for December by reporting companies totaled 5,004 units, 294 under the 5,298 reported sold by the same companies during November, and 586 above the 4,418 sold during January, 1935, lowest month in the year.

Six months, March through August, saw sales of more than 10,000 units recorded. May was the best month, with 16,940, and June was next, with 15,652. Other months ranked as follows: April, 14,951; July, 13,674; March, 11,162; and August, 10,381.

Companies reporting commercial sales to Nema include Baker, Brunner, Carbondale, Carrier, Crosley, Frigidaire, General Electric, Gibson, Kelvinator, Leonard, Merchant & Evans, Norge, Phoenix, Reliance, Servel, Uniflow, Universal Cooler, Westinghouse, and York.

Complete report of December sales will be found on page 20 of this issue.

Eastern Servel Distributors  
To Meet Feb. 28 & 29

NEW YORK CITY—The first eastern sales conference of Servel commercial refrigeration equipment distributors will be held at Hotel Lincoln here Feb. 28 and 29.

President Louis Ruthenburg of Servel, Inc., will be principal speaker at the opening of the conference, which will be devoted entirely to discussions of commercial refrigeration and air conditioning.

Carrier Reports Difficulty  
In FHA Financing

NEWARK — Carrier Engineering Corp. has reported to the Federal Housing Administration that, while it has had no trouble in financing FHA loans in New Jersey, it has experienced considerable difficulty in other parts of the country.

The company is said to be making arrangements to handle all of its FHA loan business in the United States through Fidelity Union Trust Co., Newark.

Around the World  
With the Editor  
Of the News

George Taubeneck (left) interviews A. S. Douglas (center), Crosley district representative, and C. V. Cozad (right), Crosley dealer at El Paso, Texas.

IN this issue is the sixth of a series of articles by Editor George F. Taubeneck, giving his personal experiences and impressions of refrigeration and air-conditioning activities on a 6-months' trip around the world.

The first group of articles in this "World Series" will be devoted to human interest stories about the editor's trip by automobile from Detroit to San Francisco. Last week he reported interviews and observations at Dallas, Texas. In this issue he tells about El Paso, Texas, and a side trip over the line to Juarez, Mexico.

Revising the schedule previously published, next week's issue (Feb. 19) will contain reports of stops in Deming and Lordsburg, New Mexico; Coolidge Dam, Globe, Roosevelt Dam, and Phoenix, Arizona. The trip along the Apache Trail proved to be so interesting that all of the copy and pictures could not be printed in this issue.

The San Diego Exposition will be featured in the Feb. 26 issue (instead of Feb. 19). A special four-page insert will be devoted to pictures of refrigeration exhibits, buildings, and many other points of general interest at the Fair, which opens today (Feb. 12).

The next three issues (March 4, 11, and 18) will also be devoted to refrigeration activities in Los Angeles and San Francisco, Calif.

After that, two issues (March 25 and April 1) will be given over to the story of refrigeration developments in Hawaii.

Refrigerator Taxes Total  
\$176,987 in December

WASHINGTON, D. C.—Refrigeration manufacturers paid \$176,987 in taxes last December as against \$144,517 in December, 1934, reports the Bureau of Internal Revenue.

Plans of Kitchen Modernization Bureau  
Are Outlined in Prospectus

NEW YORK CITY—With the national and regional organization complete and funds for the first year of national activities and headquarters operation assured, the National Kitchen Modernizing Bureau has issued a prospectus telling the plans for national promotional and publicity activities during the year.

The bureau, organized under the direction of the Edison Electric Institute and National Electrical Manufacturers Association for three years as a minimum of operation, has as its purpose the promotion of the sale of electric ranges, refrigerators, and other electrical appliances which go to modernize American kitchens.

Having asked itself two questions about the cooperative activity: "Is it beneficial to the public? Does it offer a practical opportunity for profit

10 Ice-O-Matic  
Units Designed  
For '36 MarketEmbossed Cabinet Adds  
Streamline Effect  
To Products

BLOOMINGTON, Ill.—Ten models, ranging in size from 4.6 cu. ft. up to 19 cu. ft., make up the Williams Ice-O-Matic line of electric refrigerators for 1936, have just been shown to factory field representatives in a special pre-view meeting.

Cabinet styling on the 1936 Ice-O-Matics is simple and modernistic, with modified streamline effect carried out in hardware and appointments as well. Hinges are of the semi-concealed type, and the door latch is triple-action, with concealed mechanism.

With this latch, the cabinet door may be opened by tripping the latch either right or left, or by pulling the handle forward. The handle may also be used to close the door, since it is of the free-latch type.

All "D" models in the line have an approved three-coat Dulux finish; all "P" models are finished in porcelain. A three-coat porcelain interior is standard on all models. Cabinet base and legs are of steel, welded into a solid frame, and finished in scuff-proof black. Base is broom-high, to permit easy cleaning underneath the cabinets.

Front of the cabinet is attractively embossed, with a wide center strip flanked by two narrower strips. Ice-O-Matic name plate is set centered in the lower half of the cabinet front, below the door. Tylac breaker strips around the food compartment door are standard on all models.

Temperature control on this year's (Concluded on Page 2, Column 4)

Fairbanks-Morse Is  
Modernizing Plant  
At Indianapolis

CHICAGO—At the completion of the \$100,000 modernization construction work being done on Fairbanks, Morse & Co.'s manufacturing plant in Indianapolis, the Home Appliance Division of Fairbanks, Morse & Co., will be moved to this plant. The plant will be in full operation by May or June.

The expansion program, according to W. Paul Jones, executive vice president of the Home Appliance Division, is a direct result of the increased demands for the products manufactured by the division.

Lord & Thomas to Handle  
Delco-Frigidaire Account

DAYTON—Appointment of Lord & Thomas as advertising agency for Delco-Frigidaire Conditioning Corp., newly formed General Motors unit for the marketing of year-round air-conditioning and automatic heating equipment, was announced last week by E. G. Biechler, president and general manager.

Lord & Thomas last fall was appointed advertising agency for Frigidaire Corp., of which Mr. Biechler is also president and general manager.

to the whole electrical industry?", the bureau answers by referring to the electric kitchen's labor-saving, health, beauty and esthetic advantages, and its low initial and operating costs.

By stimulating public interest in kitchen modernizing by electrification, the bureau believes that an inevitably increased market will be produced for a wide variety of electric equipment for kitchen use, including both the major load-building appliances and many other devices which use electric service in the kitchen. Thus, promotion of kitchen modernization not only aims directly at the immediate increase in sales of varied electric equipment, but offers a vital means for increasing central station loads, bureau officials declare.

The program, as it is planned, will (Concluded on Page 9, Column 1)

FHA Orders Down Payment;  
Officials Will Push Fight on  
Misuse of Plan in Detroit'Roosevelt Will Cancel  
Debt' Salesmen Tell  
Purchasers

By Phil B. Redeker

DETROIT—Stirred to action by a mounting number of complaints from consumers and by adverse newspaper publicity, Federal Housing Administration officials and local retailers of household appliances are taking steps to curb the practices of a few unscrupulous salesmen who are misrepresenting facts in connection with the sale of FHA-financed equipment.

Detroit has been the outstanding "trouble spot" among all the metropolitan centers of the nation in the matter of flagrant abuse of the FHA loan provisions for financing of appliance sales.

Less than a month ago the FHA investigators from Washington and U. S. Department of Justice agents combined forces in a drive to nab salesmen who were misrepresenting themselves as FHA officials, and on Jan. 19 three salesmen were arrested on charges of impersonating Federal officers and are out on bond awaiting action by a U. S. Grand Jury under complaints prosecuted by Assistant U. S. Attorney W. G. Comb.

Last week, however, the situation flamed into the spotlight when Common Pleas Judge Joseph A. Gillis "blew up" to local newspapermen upon coming across a case of a worker, with a family of four, getting \$18 a week, who had been loaded up with \$271 worth of equipment.

Judge Gillis declared that he had numerous complaints that the salesmen were making statements to the effect that the government is selling the goods, or that they are making the loans, and will cancel the debts before long.

(From other sources it is learned that one of the favorite "sales talks" used by such salesmen goes something like this: "Now don't worry if you can't make a payment—you know how President Roosevelt feels about the working man, he isn't going to let anybody take your furnishings away just because you can't meet a payment on time.")

Local newspapers are investigating and giving the story a big play on their front pages, with the result that local FHA officials are threatening another investigation, and Better Business Bureau is promising to "smoke the thing out" and to prosecute the more flagrant cases.

Real cause of the trouble, declares H. I. McEldowney of the Better Business Bureau, is the fact that like many another government emergency plan, the program was not well conceived and planned out in advance, and was pushed ahead too fast at first.

In the appliance field this meant that no discrimination was exercised at first by insured financial institutions in making agreements with retailers who were to sell equipment under the FHA modernization loan plan.

This resulted in all types of fly-by-nights, unscrupulous operators getting into business with only one purpose in mind—to take all possible advantage of the program "while it was hot."

C. A. Gardner of the Detroit office of First Bancredit Corp., one of the insured institutions here granting FHA loans, tells of the evolution of the current situation in the following graphic manner:

"We opened here last year and have granted more than \$2,000,000 in FHA loans. Ninety per cent of these have been in the Detroit metropolitan area. "In the fall we began to get complaints, and meanwhile we got a better line on some of the dealers. On Nov. 25 we discontinued doing business with 200 dealers of the 'fly-by-night' variety.

"Where a buyer of equipment charges misrepresentation and we hear about it, we immediately ask the dealer to re-purchase the account and in nearly every case we discontinue doing business with the dealer.

"When the reputable dealers began to get alarmed about the methods being used in FHA selling and formed the Better Appliance Retailers Lea-

10% of Selling Price Now  
Required; Change Made  
In Contract Form

WASHINGTON, D. C.—Effective Saturday, Feb. 15, the Federal Housing Administration will require a down payment of 10 per cent on all household electric refrigerators purchased under the FHA insured loan plan.

This ruling marks definite effort of FHA officials to tighten up the loan regulations with respect to the financing of refrigerator sales. Text of the ruling is as follows:

"Regulation No. 7 is hereby amended by the addition of the following:

"Where the proceeds or any part of the proceeds of a loan or advance of credit is to be used for the purchase of a household refrigerator, washing machine, and/or ironer, the loan or advance of credit will not be eligible for insurance unless the borrower has made a cash down payment of at least 10 per cent of the cash purchase price of the refrigerator, washer, and/or ironer.

"This applies only to household refrigerators, washing machines, and/or ironers, and becomes effective Feb. 15, 1936.

"Financial institutions are instructed in making loans which included this type of equipment to have the borrower answer the following questions which will be written or typed at the bottom of the reverse side of the credit statement form FHE 3CS.

"Type of equipment.....  
"Cash selling price.....  
"Cash down payment....."

G-E Toppers Meet  
At Conventions

CLEVELAND—First of a series of six conventions being held for salesmen in the G-E Toppers Club whose members comprise the leading salesmen in General Electric Co.'s entire distributing organization, was held here recently.

Designed to reward outstanding sales achievements during 1935, this series of conventions differs from ordinary conclaves in that only one or two business meetings are held throughout the three-day sessions, and all other activities are devoted to entertainment.

Other conventions have been held in Chicago and in Atlantic City. Attendance at these gatherings has been between 100 and 200 salesmen, states Jean DeJen, national director of the G-E Toppers Club and manager of the campaign division. Three remaining conventions will be held in Miami, New Orleans, and Del Monte, Calif.

Officials who spoke at the conventions include: A. M. Sweeney, national sales manager; R. C. Cameron, assistant sales manager; Wil Galpin, retail sales manager; and George Kobick, apartment house sales manager.

Highest Topper in the organization is Charles S. Witherspoon of New York, who has sold approximately \$1,500,000 worth of G-E refrigerators.

Electrical Leagues  
Form Association

WASHINGTON, D. C.—An International Association of Electrical Leagues, open to all local electrical co-operative market developing organizations, was organized and set into operation to replace the former Electrical League Council at a recent meeting of electrical league managers held here Jan. 18 at the Electric Institute of Washington headquarters.

The organization is the outcome of a meeting of operating executives of electrical leagues held in Cleveland, July 25. At that time a plan and scope committee was appointed to consider the idea; J. E. North, chairman of that committee, presided over the meeting here.

Members of the newly formed association, admitted at nominal dues of (Concluded on Page 2, Column 5)

# The ANSUL TWINS



**ANSUL CHEMICAL COMPANY**  
MARINETTE \* \* \* \* \* WISCONSIN

## FHA Misrepresented By Salesmen, Claim

(Concluded from Page 1, Column 4)  
gue, and drew up rules designed to eliminate such practices, we backed them up, as did the other insured institutions here.

"In fact, we practically made it plain to dealers that if they wanted to do business with us, they had better keep in line with the fair practice code which the League set up.

"Our credit requirements were tightened up. If the man's sworn credit statement shows that he has obligations that he must pay regularly, in the form of instalments (such as automobiles and furniture payments, rent, etc.) that take up 30 per cent or more of his income, we won't allow the loan to be granted.

"Other requirements are that he not be more than 65 years of age, that he isn't behind on his rent, and that he can show that he has been steadily employed over a period of months."

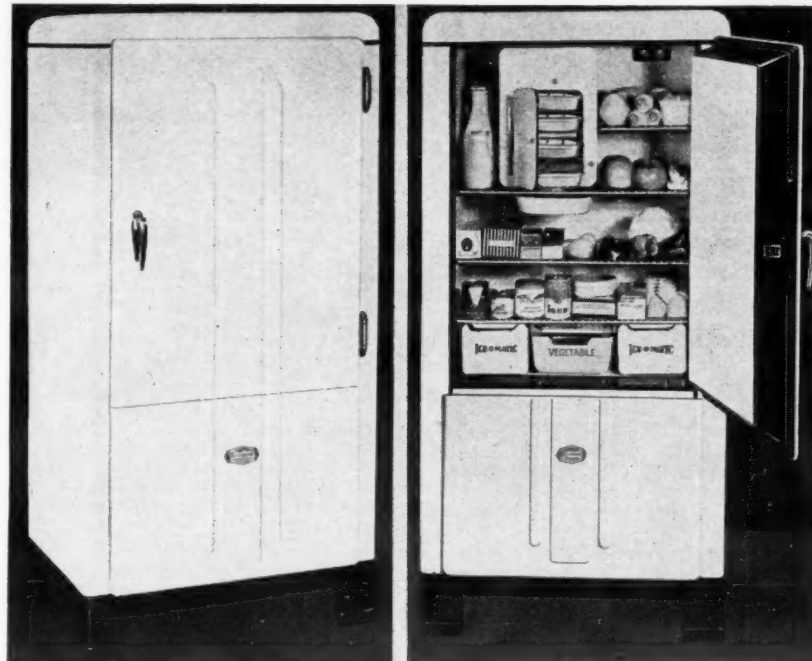
One of the charges made in the newspapers was that the public was being sold "shoddy, second-hand merchandise" under the guise of "FHA bargains." This charge was not strictly true, as the law (Title 1 of the National Housing Act) forbids the sale of second-hand merchandise under FHA terms.

The charge seems to have risen from complaints made from users of oil-burning heaters, bought under FHA terms, and which failed to function properly.

Mr. Gardner and Mr. McEldowney both declared that "service complaints on electric refrigerators have been practically negligible."

Judge Gillis has agreed to turn over all cases involving misuse of the FHA plan to R. J. Foley, Michigan FHA administrator, and to McEldowney.

## New Ice-O-Matic Inside and Out



Model No.	Storage Capacity Cu. Ft.	Shelf Area Sq. Ft.	No. of Ice Trays	No. of Cubes	Lbs. of Ice	Exterior Dimensions Height Width Depth
D-3641	4.2	10.25	3	54	3.75	52 1/2 24 1/2 20 3/4
D-3651 (D-3652)	5.3	11.45	3	63	6.41	56 1/4 26 1/2 20 3/4
D-3662 (P-3662)	6.4	13.3	4	84	8.54	58 1/2 28 20 3/4
D-3682 (P-3682)	7.8	18.9	5	105	10.68	63 31 21 3/4

Three large all-porcelain models of 12, 15, and 19-cu. ft. net capacity supplement the standard Ice-O-Matic line. Specifications on these were not furnished.

## 10 Models Included In Ice-O-Matic Line for 1936

(Concluded from Page 1, Column 3)  
models has been moved to an independently mounted position on the right, or hinge, side of the cabinet. A new and simplified control is used. The control panel has two dials, one for actuating the start-and-stop mechanism, and the other for temperature regulation.

### Wider Temperature Range

This new temperature control is said to offer a wider range of temperature selection. Normal setting is 12 to 28°, but the wider range makes available temperatures from 2 to 18°, or from 22 to 38°.

Cabinet dome light is standard on all models except the 4-cu. ft. size. In this unit, a light may be had at a small additional cost.

Sliding-drawer food systematizers are supplied as standard equipment, two with the 5-cu. ft. models and three with the 6 and 8-cu. ft. sizes. Glass-covered jars for left-overs, in a handy sliding drawer, are furnished with the 6 and 8-cu. ft. units. Each model except the 4-cu. ft. size includes a vegetable freshener.

Shelves are of round, hot-tinned wire, with wires spaced closely for greater strength and to prevent tipping of food containers; and shelf arrangement is designed to give maximum food storage space.

Insulation in all models is Balsam Wool. All-steel cabinet frames are used throughout the line. Ice-O-Matic's Model T compressor is used in all models—the one-cylinder series in the D-3641 and 3651, and the two-cylinder series in the rest of the line. The two-cylinder compressors have pressure-type lubrication to all bearing surfaces.

### Capacities of Models

Smallest model in the line, D-3641, has a capacity of 4.2 cu. ft. and shelf area of 10.25 sq. ft. It has three ice trays, capable of turning out 54 cubes, or 3.75 lbs. of ice, per freezing.

Models D-3651 and D-3652, identical except that the latter has a two-cylinder compressor, have capacities of 5.3 cu. ft. and shelf areas of 11.45 sq. ft. There are three ice trays, which make 63 cubes, or 6.41 lbs. of ice, per freezing.

Models D and P-3662 have a capacity of 6.4 cu. ft., a shelf area of 13.3 sq. ft., and four ice trays, which turn out 84 cubes, or 8.54 lbs. of ice, per freezing.

Models D and P-3682 have a capacity of 7.8 cu. ft. and a shelf area of 18.9 sq. ft. Five ice trays have a capacity of 105 cubes, or 10.68 lbs. of ice, per freezing.

Three large all-porcelain cabinets of 12, 15, and 19-cu. ft. net storage capacity supplement the standard-size cabinets, and complete the line. These larger models meet the needs of larger homes and institutions.

## Doubleday-Hill Co. Takes On Leonard Line

BALTIMORE—Doubleday-Hill Electric Co. has been appointed distributor for Leonard refrigerators in the Washington, D. C., territory. The company also handles Atwater-Kent radios and refrigerators in the Baltimore and Washington areas.

## Electrical Leagues Form Association

(Concluded from Page 1, Column 5)

\$10 per organization member per annum, are separated into five divisions, each represented on a central board of governors. The five divisions are: eastern, east central, west central, and western United States, and Canada.

Division chairmen, automatically members of the board of governors, will select four additional members to be chosen from one or more divisions, thus making available the talent and experience of men who have had wide experience in league operation. All members of the board, the articles of confederation specify, must be full-time, paid operating executives of member organizations. The five divisions named Ralph Neumuller, A. A. Gray, G. W. Weston, Victor Hartley, and G. W. Austen as chairmen. They selected J. S. Bartlett, C. H. Christine, G. R. Conover, and J. E. North to complete the board.

Officers, elected from the board, by the board itself, were: president, Mr. North, Cleveland; vice president, Mr. Neumuller, New York City; treasurer, Mr. Gray, Chicago. The secretary and assistant secretary, who may be chosen from outside the organization, are: secretary, O. C. Small of National Electrical Manufacturers Association; and assistant secretary, E. M. Rice, also of Nema.

With the organization completed, the conferees discussed certain industry programs and various phases of league operation. These included: the National Kitchen Modernizing Program, development of a program to promote adequate wiring, the 1936 electrical housewares program, and league financing.

The following were present at the meeting: Electric Institute of Washington, Mr. Bartlett and William G. Hills; Essex Electrical League, A. W. Lunn, R. H. Osgood, J. H. Stapleton; Electrical League of South Jersey, H. K. Suckling; Electrical League of Burlington Co. (N. J.), J. L. Fuller; Central Jersey Electrical League (Trenton, N. J.), S. L. Chapin; Electrical League of the Niagara Frontier, S. S. Vineberg; Electrical Association of Philadelphia, Mr. Conover and W. L. Hoos; Electric League of Pittsburgh, G. H. Nickerson; Electrical Association of New York, Mr. Neumuller; Electrical Association of Chicago, Mr. Gray; Electrical Association of New Orleans, F. W. Stevens; Cincinnati Electrical Association, E. P. Zachman; Electrical League of Cleveland, Mr. North and Ralph Jones; Electrical League of Milwaukee, W. O. Zervas; Electric and Radio Association of Kansas City, Mr. Weston; and Electric Service League (Toronto), Mr. Austen.

## Sparton Reports 6-Mo. Profit of \$46,219

JACKSON, Mich. — The Sparks-Withington Co., manufacturer of Sparton refrigerators, radios, and automotive products, reports a net profit of \$46,219, after taxes and charges, for the six months ended Dec. 31. This compares with the net loss of \$148,977 for the corresponding six months of the preceding year.

Sales in the six-month period were reported at 13 per cent more than in the second half of 1934, and orders for electric refrigerators, in dollar value were twice those of 1934.

# Now—

**A truly modern refrigerator should have a Flexible Rubber Tray or Grid in every ice compartment**

Enthusiastic recommendations of users and consistent national advertising have sold the advantages of Flexible Rubber Trays and Grids to the refrigerator buyers of 1936.

There's ample proof of that fact in a survey of recent refrigerator purchasers, which shows 99% expressing a definite preference for this modern ice cube convenience.

Your prospects want this efficient

method that pops ice cubes from tray to glass in a split second—one cube at a time or a whole tray full. They want ice cubes which are full-sized, cold, and dry.

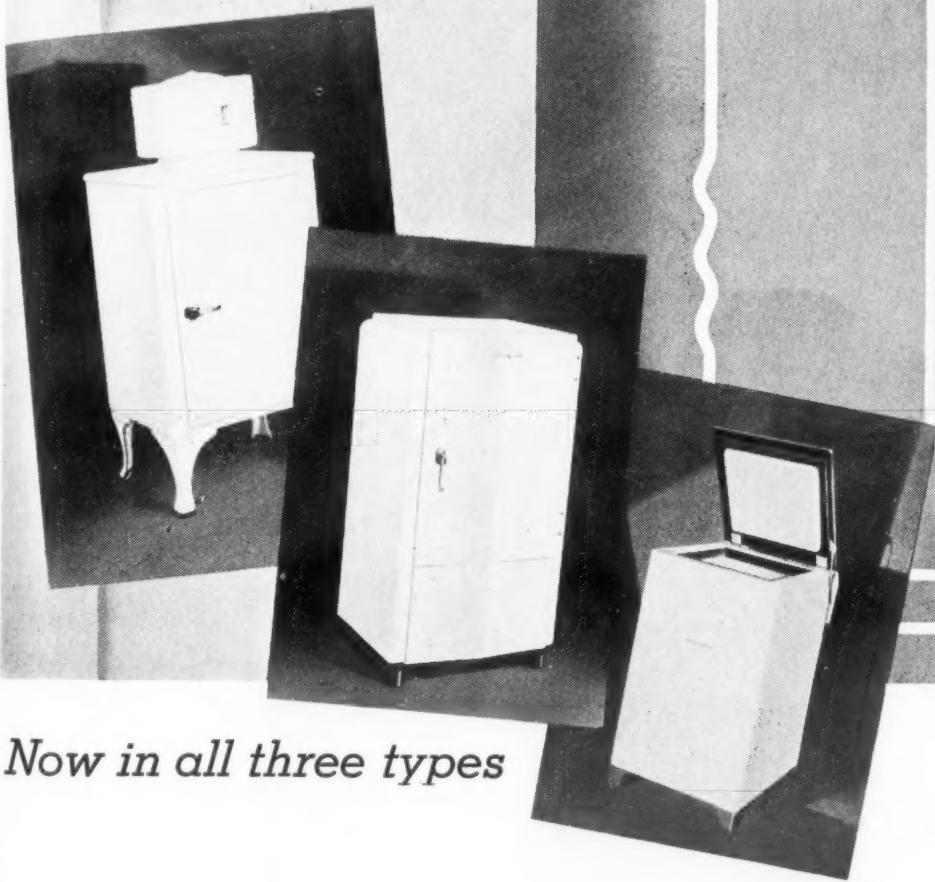
Get your salesmen full sales advantage of this tremendous consumer demand. Insist that the refrigerator you sell comes factory-equipped with a Flexible Rubber Tray or Grid in every ice compartment.

**THE INLAND MANUFACTURING COMPANY • DAYTON • OHIO**



*Ice Cubes the Modern Way*

# SEALED-IN-STEEL SINCE 1927!



Now in all three types

## Proved by Experience

**the one important feature among all electric refrigerators  
—most important both to the user AND TO THE DEALER!**

♦ In 1927, after fifteen years of research, General Electric introduced the first sealed-in-steel refrigerator mechanism. General Electric engineers claimed it would revolutionize operating and maintenance costs of household electric refrigerators. It did! Its 8 year record for dependable year after year performance at low cost

is unparalleled. It has saved refrigerator users hundreds of thousands of dollars.

♦ Basically unchanged, this famous G-E sealed-in-steel mechanism, product of the world's greatest storehouse of electrical knowledge, now has double the "cold" producing capacity and uses 40% less current! General Electric Refrigerators, of

course, have all the modern convenience features, but General Electric never forgets that dependable service and low operating cost, day after day, year after year, are what both user and dealer really want. General Electric dealers experience greater net profits through customer satisfaction and the elimination of costly service problems. General Electric Company, Appliance and Merchandise Department, Section DF-21, Nela Park, Cleveland, Ohio.

**GENERAL  ELECTRIC**

# Around the World

With George F. Taubeneck

Arrive June 14, 1936, at the International Congress of Refrigeration The Hague, Holland

Start Jan. 8, 1936, from the home of Electric Refrigeration News Detroit, Mich., U.S.A.



George Taubeneck, editor of *ELECTRIC REFRIGERATION NEWS*, was entertained at a luncheon given in Honolulu Saturday, Feb. 1, by the Hawaiian Electric Bureau, which was attended by 80 representatives of the refrigeration industry. A full report of the meeting will appear in a coming issue.

Mr. Taubeneck is now en route to Sydney, Australia, having sailed from Honolulu, Hawaii, last Monday, Feb. 10, on the *S.S. Mariposa*. One-day stops will be made at Pago Pago, Samoa (Feb. 15); Suva, Fiji Islands (Feb. 18); and Auckland, New Zealand (Feb. 21); arriving in Sydney Feb. 24.

While in Australia, he will probably make inland trips to Adelaide and Melbourne, and is scheduled to sail on March 7 from Sydney to Singapore on the *S.S. Marella*. Stops will be made at Brisbane, Queensland, Australia (March 9), Townsville (March 12), Thursday Island (March 15), and Darwin, North Australia (March 19), Soerabaya, Java, Dutch East Indies (March 24), Semarang (March 25), and Batavia, Java (March 26), arriving in Singapore, Straits Settlements, March 28, where he may be reached by London or Amsterdam air mail addressed in care of Mr. H. C. Faxon, The Borneo Co., Ltd., Finlayson Green, Singapore, Straits Settlements. (See page 7 for further information on how to reach Mr. Taubeneck en route.)

## Texas Drivers

Maybe Bob and I are spoiled, but we don't care much for driving in Texas. In the first place, the roads aren't nearly what they are cracked up to be. You ask directions to the next city, and always they add: "and the roads are fine all the way."

And then what do you get? Narrow, rough, bumpy trails of doubtfully hard surface which might be O.K. for the truckish vehicles which seem to predominate the Texas motorcade, but which hamstring a fast car with passengers eager to get places in a hurry.

Even worse are the Texas drivers. To them a horn means absolutely nothing. If anything, they move over a little closer to the center of the road when you honk.

## Texas People

But please don't get the idea that we object to Texas people *per se*. On

the contrary, if we had deific qualities it's possible that we'd call the Texans our Chosen People.

To begin with, Texas men are big physically, and strong. They are MEN. Having wrestled and wrestled a living—and in many cases, a very good one, out of the unpromising land which they have pioneered, they aren't easily upset or perturbed about such temporary conditions as a depression.

You never hear of a nut philosophy coming out of Texas, nor a Townsend, or a Sinclair, or a Coxey. Revolt? Hell. Why should they blame their troubles onto someone far away whom they've never seen?

They've always made a living, and reckon as how they'll always be able to—and a gentle horselaugh to the birds who think they can bring on the millennium by passing a law.

Of all the states visited, we found the sanest, straightest, strongest, most self-sufficiently capable men in Texas.

As for Texas women, we were a little disappointed. Not in the women themselves, y'understand, but in our failure to meet any.

For years we have been coming across magnificent specimens of healthy, clear-eyed, clear-headed womanhood who have come originally from Texas, and hence we had come to the conclusion that the Lone Star state must breed a superior race of pleasant Amazons.

No doubt this guess of ours does hold true, but in our short stay we didn't have much of a chance to verify it.

## See That Fly?

So rarefied is the atmosphere which covers the more remote Southwest that we were reminded of that ancient gag about the two New Yorkers who were boasting about their highly developed senses of perception. Said the first braggart:

"See that fly walking around up there on top the Chrysler Bldg.?"

"I can't see him," snorted the second braggart, "but I can hear him walking around."

Out in the vast, flat desert spaces you can see objects unbelievably far away. For instance, after having been surprised a number of times by the length of time it took us to arrive at a landmark we had spied, we saw a red light piercing the evening twilight down the road. After watching it silently for a few minutes we made bets as to how far away it was.

Having been fooled before, we each consciously exaggerated our guesses. It really seemed just a couple of hundred yards down the road; but one guess was three miles, the other five.

It turned out to be 11 miles distant, by the speedometer, and was a neon sign swinging in front of a roadhouse entrance, advertising beer.

## Weary Hands

On this trip it hasn't been our spine that has ached, as was the case with other continent-crossers we met, but our hands.

Typing, writing longhand, gripping the steering wheel on Texas curves and bumps, shaking hands, manipulating the camera at great speed and under tension, zipping and unzipping our half dozen zipper bags—these daily exercises have given our hands a harder workout than they've had since the days when we used to practice on the violin.

## Wild West

First whistle-stop after we left Ft. Worth (which was chiefly memorable for its 12-cent gasoline—and were we thankful for a 25-gallon tank!) was Mineral Springs, Texas.

In case you didn't know, this small resort town is the home of Crazy Water Crystals, a patent home remedy which is merchandised nationally through an exceptionally well-regimented system of factory-controlled retail stores—following JOHN PATTERSON's formula almost to the letter.

Crazy Water Crystals are extracted from the mineral water which brings so many health-seekers to Mineral Springs. But when you buy the packaged product you don't get to stay in this quiet small town, which purrs contentedly at the foot of a young mountain—and we imagine that the clean sunshine and the invigorating air of Mineral Springs have thera-

peutic qualities fully equivalent to those of the mineral-salted water.

Two excellent big resort hotels, one of them the Crazy Water hotel, rise spectacularly out of this two-story burg.

In Cisco we ran into the Wild West of the horse operas again. Lanky, drawing Texans with cactus needles in their pants, a scarcity of mazda lamps, loads of horses, terrible food, nickel-phonographed saloons (HOMER CAPEHART must have made a clean-up for Wurlitzer on slot-machine music out in these parts), and everything but a running duel in the main street.

Before and after Big Spring there were good roads at last. Up until this time we had detoured over half the map of Texas, and chiefly on dirt or gravelled roads.

But now came concrete, level, and straight for miles and miles. So here we could push the Stewart-Warner speedometer needle up to 100 and leave 'er there.

In Pecos, New Mexico, we stopped for food, and found the craziest, shoutingest, drinkingest, yellingest, most hilarious bunch of people since New Years in Walla Walla.

The way they drive cars in this hamlet you'd think they were testing all-steel Dodges for resiliency on the famed Chrysler proving grounds (see advertisements).

Any moment we expected to see a Chevrolet go right up the back of an Airflow into a double forward somersault, ending up with a one-and-a-half gain in a clove hitch.

From Pecos to El Paso one traverses the Davis and Guadalupe mountains. In the moonlight (we or rather, I, for Bob slept soundly) found them a playground of the gods.

So close do the stars seem to this faerie land of Nature that in zooming up a steep incline you feel you are rocketing right into the middle of Orion.

## City of Traders

El Paso, Texas, has an interesting situation in regards to its refrigeration market. In the first place, more than 60 per cent of the population is Mexican. In the second, and compensating for the first, El Paso has probably the World's Largest Trading Area (in square miles).

Hence the indiscriminate cold canvass is definitely out as a means of securing prospects in this thriving, modern community. The Mexicans, with their low living standards and incomes, are as a rule not appliance buyers. But the "white" people are, for the average income of white families in El Paso is comparatively high.

Out in the surrounding desert-and-mountains country are other prospects, too; but you have to wait for them to come in to the store. Which they do, by motor, unexpectedly and unpredictably, and with money in their pockets.

Subtracting the Mexicans, and the 3,000 soldiers in the U. S. Army Post, El Paso gets down to a community of 40,000 possible prospects. Nearly all of the people working in commercial establishments, they are canny buyers. El Paso is a City of Traders.

## Impartial Pushers

E. A. WERNER, merchandising manager of the El Paso Light & Power Co., had just returned from Detroit a few hours before we walked into his appliance showroom.

He had seen us on the stage at

the Kelvinator convention, and was as surprised as the man who thought he had drowned the cat, when he found us at his door awaiting his entrance.

In days gone by Mr. Werner was a Stone & Webster man in Puerto Rico, and down there he got into the habit of reading *ELECTRIC REFRIGERATION NEWS* from "kiver to kiver."

It was one of the few English publications he read, and he claims that 'most everything he knows about the refrigeration business he learned from the News.

When we get to Hawaii, Mr. Werner wants us to look up CHARLEY NOLAN, commercial manager of the Hawaiian Electric Co., who has recently completed a tour of the United States.

Also through Mr. Werner we met GEORGE KING of the El Paso power company, who is secretary of the Electric Refrigeration Bureau of El Paso, and who is given credit for having helped El Paso distributors and dealers to keep the refrigeration picture there unusually clean.

According to these two gentlemen, the power company put more than 1,500 Kelvinators on its lines last year, which was an 80 per cent increase over their 1934 business.

They sold these in El Paso, and in their unbelievably wide but scantily populated territory in Texas and New Mexico, through three utility display points and 16 dealers.

Frigidaire, they say, gets the most business in their territory.

To this progressive utility, selling refrigerators is a business considered in its true place—as quite secondary to building the load on their lines.

Their salesmen are the representatives of the power company in their respective territories. They read the meters, make collections, and harass delinquent accounts.

If a dealer for another make of refrigerator sells a refrigerator in their territory, the utility representative gets \$4.50, which is the same commission he'd get if he sold a Kelvinator.

Hence this utility, while being an active merchandiser, is not an active competitor in the usual sense of the word. Their salesmen are constantly turning names of prospects over to other dealers, which makes the dealer-utility situation in that vast territory just dandy.

## Ex-Catcher

On more than one occasion this department has commented on the ingenuity with which POWELL CROSLLEY, JR., makes his various enterprises—the manufacture of radios and refrigerators, the world's most powerful radio broadcasting station, and a major league baseball club—mutually assistant and complementary.

In El Paso we discovered a new manifestation of this peculiar genius. Mr. Crosley has learned what to do with tired-armed catchers (which is in its way equivalent to finding a place to put used razor blades, or knowing what to do with the 1923 Follies girl who didn't marry a millionaire).

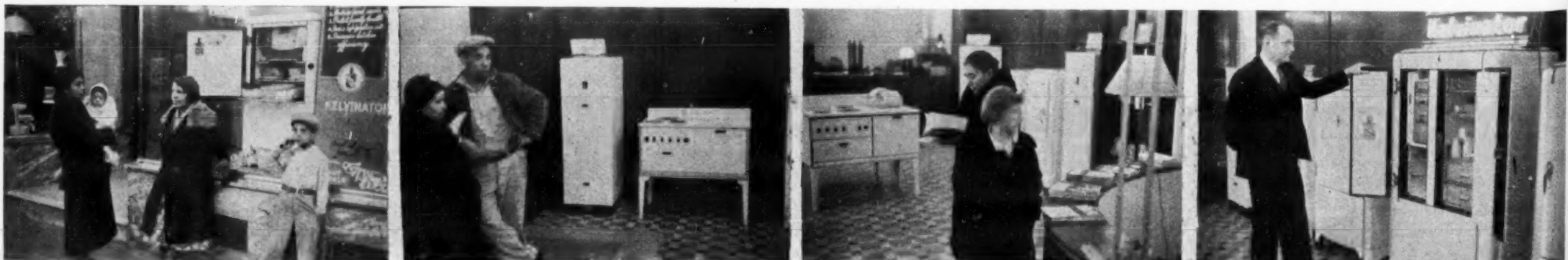
District representative of the Crosley Radio Corp. in that territory is A. S. DOUGLAS, a big, winning fellow who used to catch PETE DONAHUE's pitching for the Cincinnati Reds (long, of course, before Mr. Crosley acquired the franchise).

Mr. Douglas, who is married to a

(Concluded on Page 6, Column 1)



(1) Bright, busy El Paso place was the Walz Frigidaire distributorship. V. L. Fulcher, retail sales manager, is giving a salesman some sure-fire sales clinches by phone. (2) Sidewalk view of C. V. Cozad's Crosley display window. (3) A. S. Douglas, former Cincinnati Reds' catcher, now Crosley district representative in El Paso territory, and Mr. Cozad. (4) George King of El Paso Power Co., secretary of the Electric Refrigeration Bureau of El Paso and fighter for clean selling.



With a Mexican population of more than 60 per cent, El Paso is a "come in and buy" rather than a "go out and sell" city. Dealers and utilities, however, are wide-awake to merchandising chances. (1) Sidewalk scene at El Paso Light & Power Co., Kelvinator dealer. (2) Mexican prospects inspecting range-water heater units. (3) More prospects for refrigerators and ranges; El Paso is a good range town. (4) E. A. Werner, merchandising manager of the public utility company, views with pride a real "big-family" size model.

**For Office Use**

Empire Buffet is designed for use in a restricted space.

**Small Refrigerator Put In Empire Buffet**

CHICAGO—Empire Cooler Service, Inc., manufacturer of water coolers, has recently placed on the market the "Empire Buffet," a portable serving refrigerator, designed for use in private offices, hotel rooms, beauty shops, and homes.

The unit is 24 in. wide, 21½ in. deep, and 35 in. high, and is available in either walnut or maple exterior. Cabinet is made by Brunswick-Balke-Coller Co., and is fitted with 4-in. ball bearing wheels so as to be easily portable.

A feature of the unit is its serving-tray top of stainless steel, providing a flat surface on which bottles, glasses, and other dishes may be placed. Handles at either side of the tray-top, as well as other fittings of the unit, are of satin-chrome.

Inside capacity of the refrigerator itself is 2½ cu. ft. The unit is equipped with a ½-hp. Delco motor, a condensing unit built by Universal Cooler Corp., and a Fedders evaporator, which freezes two trays of 56 ice cubes at a single freezing. A small water container is also available with the unit.

**Alabama Dealers See New Conservadors**

BIRMINGHAM, Ala.—Dealers from all parts of Alabama attended the formal showing of the Fairbanks-Morse "C" line of refrigerators which Wimberly & Thomas Hardware Co., F-M distributor, held at the Tutweller hotel here recently.

W. A. Thompson, manager of the Wimberly & Thomas appliance department, conducted the meeting. Dealers were addressed by W. R. Ceperly of the home appliance division of Fairbanks-Morse.

**Chicago Crosley Dealers Increase Orders 300%**

CHICAGO—An increase of 300 per cent in orders booked over the record for any previous meeting is reported by Clarence S. Tay, manager of the Crosley Distributing Corp., here following the dealer meeting held at the Knickerbocker Hotel recently. More than 400 dealers attended.

**50 Artificial Food Items In Roman Art Line**

ST. LOUIS—More than 50 items are included in the 1936 line of artificial food products for household electric refrigerator displays which the Roman Art Co., Inc., has introduced.

In addition to general food items, the line includes dummy cartons of nationally known food products, and also bottle products. Kits are made up to meet various requirements.

**Crosby Shows Shelvador Line to Kansas Dealers**

WICHITA, Kan.—Stimpson Sales & Investment Corp. distributor of Crosley Shelvador electric refrigerators, radios, and washers, showed its 1936 lines to dealers at a meeting Jan. 13 in the Allis Hotel. Don Crosby, factory representative of Crosley Radio Corp., was in charge of the meeting. E. L. Stimpson is president of the distributorship.

**Calgut to Head District Sales for Colen-Gruhn**

NEW YORK CITY—Joel M. Calgut has been appointed divisional sales manager in the Brooklyn and Queens territories for Colen-Gruhn Co., Inc. Leonard refrigerator.

Appointment of William M. Shipley as sales representative for this company in the lower Manhattan territory, was also reported by B. D. Colen, president.

**2 Branches Opened by Anthracite Radio Co.**

WILKES-BARRE, Pa.—Anthracite Radio Sales Co., Crosley distributor for northern Pennsylvania with headquarters at Scranton, reports the opening of two new branches, to be located at 88 N. Main St., here; and 104 Logan St., Pottsville.

Announcement of the opening of the new branches was made by Leroy Winters, sales manager, at a company meeting held at the Durkee hotel here recently.

After the presentation of the 1936 Crosley refrigerator line to the 200 merchandisers present, its features were explained by W. J. Calsam, Pottsville representative of Anthracite, who will take over the management of the new Pottsville branch.

**Bonfig Will Manage RCA Western Division Sales**

CAMDEN, N. J.—Henry C. Bonfig, formerly sales manager of General Household Utilities Co., was made manager of the western division of RCA Mfg. Co. during recent reorganization of the company's field forces.

**Gies to Head G-E Credit & Service Committee**

CLEVELAND—A. J. Gies, formerly auditor of the merchandise divisions of the General Electric appliance and merchandise department, has been appointed assistant to C. W. Wilson, G-E vice president. He will act as chairman of the newly formed credit and service committee.

Mr. Gies has been with the General Electric Co. since 1918. He has also held the positions of auditor of disbursements, and assistant to Vice President C. E. Patterson.

Succeeding Mr. Gies as auditor is C. E. Anderson, formerly assistant to I. D. LeFevre, G-E comptroller.

**A.C. Brown Is Transferred to Dutton Central Office**

HASTINGS, Nev.—A. C. Brown, formerly with the Omaha branch of W. M. Dutton & Sons Co., Spanton distributor, has been transferred to headquarters here, to direct the refrigeration and radio department, reports H. A. Lainson, president.

J. J. Devaney will succeed Mr. Brown in the Omaha office.

**Dallas G-E Distributor Entertains 250**

DALLAS—Approximately 250 dealers and public utility representatives were guests of Electric Household Appliances, Inc., General Electric distributor in this territory, at a recent meeting in the Hotel Adolphus here. All of G-E's 1936 products were displayed.

O. D. Miller, president of the distributorship, was toastmaster at the dealer banquet.

**Kahn Store Hires Semmel As Electrical Head**

PHILADELPHIA—H. C. Semmel, for the past six years connected with the sales promotion department of General Electric Supply Corp., has recently been made buyer and electrical merchandiser for the H. C. Kahn and Son Department Stores of Eleventh and Filbert Sts., and 929 Market St. here.

With branches in Chester and Norristown, the Kahn stores have been expanding in all departments, including the refrigeration, radio, and home laundry equipment sections.

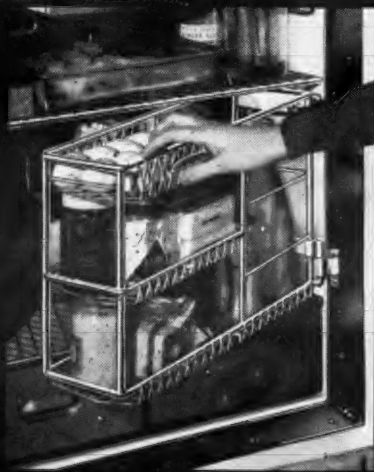
**Electric Invisible Kitchen Opens Three Branches**

CHICAGO—E. L. Bennett, vice president and general manager of the Electric Invisible Kitchen Co., last week reported the opening of three direct factory sales branches, which will be located at 12 East 41st St., New York City; Laird & Co., Boston; and 307 Lewis Tower Bldg., Philadelphia. E. E. Goerk is sales manager of the New York City office; Robert Laird is president of the Boston office; and Frank Rosen heads the Philadelphia office.

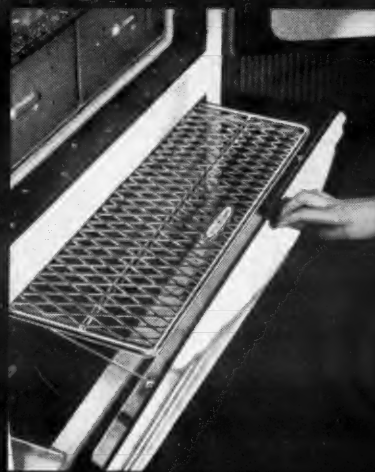
Following a showing of the electric invisible kitchen in New York recently, Mr. Bennett opened another exhibit in the Building and Household Show in the Lincoln Bldg. Other displays are scheduled for Boston, at the Electric Household Show in April; Philadelphia Builders Show, March; Chicago Midwest Show, also in March.

**Scott Leaves Rex Cole, Inc.**

NEW YORK CITY—Sam Scott, manager of Rex Cole, Inc., operations at R. H. Macy & Co., Inc., has resigned, planning to enter the retail electrical appliance business in New Jersey.

**NO REFRIGERATOR EVER OFFERED HOUSEWIVES So Much BEFORE!**

SAV-A-STEP—on its own hinges or snapped onto refrigerator door—turns back shelf space to front space



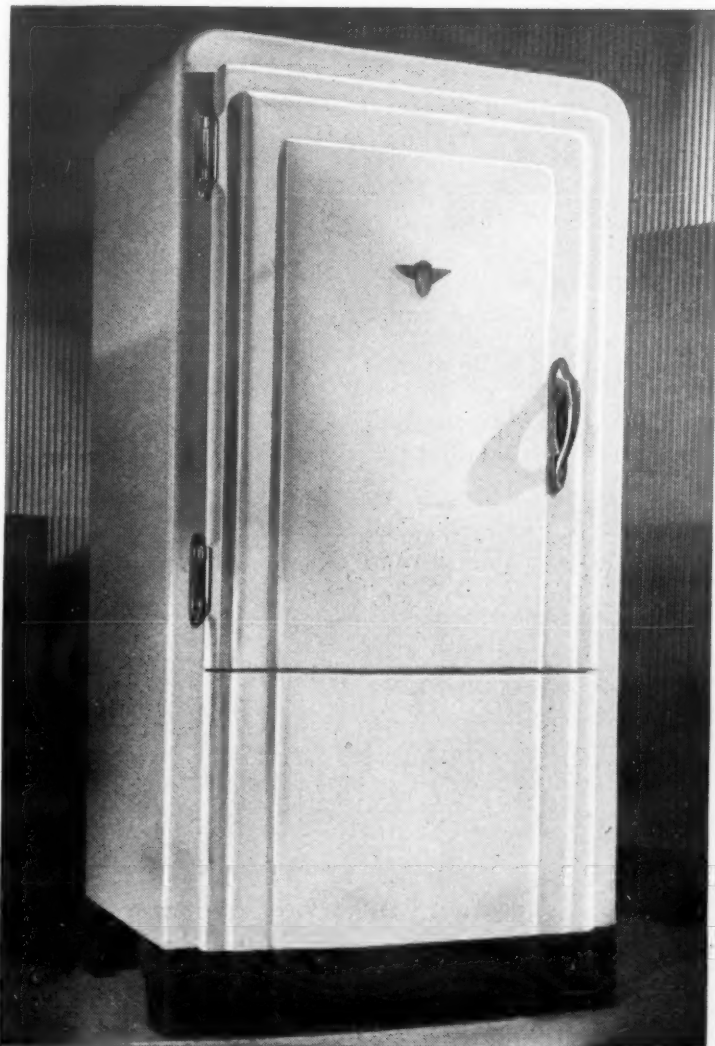
SLID-A-TRAY slides out at a touch—holds almost a shelf-full of food at once—frees hands for rearranging



First illuminated airplane-dial cold control features this new evaporator with its extra-large ice capacity



Famous Stewart-Warner Slo-Cycle twin-cylinder compressor gives record economy and service freedom

**1/3 MORE "Front" Shelf Space—New and Provable Current Economy—Utterly New Convenience—All Make STEWART-WARNER****Your Best Bet for 1936**

Amazing SAV-A-STEP, SLID-A-TRAY and many other new hits give you what it takes to OUT-DEMONSTRATE and OUTSELL your competition—AT A PROFIT!

● The biggest "edge" over competition you'll see this season is yours with these beautiful new Stewart-Warners! From top to bottom, they're built to make plenty of sense to your prospects—and therefore make sales and profits for you.

They have eye appeal galore. They're the handiest, roomiest refrigerators ever built. With SAV-A-STEP, SLID-A-TRAY, TILT-A-SHELF and other improvements, the housewife can arrange foods to suit herself—and still have everything at her fingertips. Because there's actually 30% more "front"

shelf space in these Stewart-Warners.

Best of all, your profits stick! The famous Slo-Cycle twin-cylinder compressor has amazed Stewart-Warner dealers with its exceptional freedom from service losses—and turned owners into boosters by its extreme economy, quietness and ample reserve cooling capacity.

There's amazingly good news for you in every word of the Stewart-Warner story. Hear it all without obligation before you go into your big season. Phone or wire your Stewart-Warner distributor now.

STEWART-WARNER CORPORATION, 1828 Diversey Parkway, Chicago

**STEWART WARNER**

# Around the World

With George F. Taubeneck

(Concluded from Page 4, Column 5)

South Bend, Ind., girl, is now a true Texan in looks, speech, and mannerisms. Also in geniality and good humor. We liked him immensely.

We found him in the dealer store of C. V. COZAD, who has a neat showroom displaying Crosley radios and refrigerators, Prima washers, and O'Keefe & Merritt gas ranges.

Mr. Cozad believes he will sell from 250 to 300 Crosley refrigerators in the city of El Paso next year. His dealership is just getting under way.

The radio business down there, he says, is something gosh-awful. There are six distributors in town, he maintains, who will all sell radios at retail—at 25 per cent off or better to anyone who walks in with cash-in-hand. It's hard for a dealer to buck that, he insists.

## Electric Range Town

To illustrate how much the FHA and financing of term paper through First Bancredit has meant to the El Paso territory, Mr. Douglas cites the example of a dealer in a New Mexican town of 300 who hadn't sold one Crosley refrigerator all summer, but who started working under FHA terms in October, and sold no less than 40 machines before the year ended!

FHA financing also helped the sale of electric ranges in El Paso. This is an electric range territory, anyway, because the summer's heat makes cooking over a comparatively cool electric range a real pleasure.

Best promotion stunt staged by this dealership was an amateur radio contest, which was conducted daily from 12:30 to 12:45, being broadcast from a soundproof booth in Cozad's store.

Listeners in would call up the dealership to cast votes for their favorites, leaving their names and addresses.

These people, all radio set owners, of course, turned out to be very good prospects for replacement radios as well as for the other products sold by the dealership.

## One-Fourth of the Business

As is generally the case, the Frigidaire distributorship still bears, big store full of hustlers. We caught them at the end of the day's work, when they were all reporting back to headquarters.

Since the death of Mr. Walz, whose name the distributorship still bears, F. L. KOONS has been president. He was in Dayton when we called, as was W. C. BAILEY, secretary-treasurer. They are also distributors of RCA-Victor radios and Easy Washers.

V. L. FULCHER, retail sales manager, was on the job, however, and he seemed to be a genuine live wire. He has a force of six salesmen working under his direction in the city, and will have 10 in the field before the Ides of March.

Despite a 25 per cent increase in quota, every salesman in his crew

made the Frigidaire BTU Club by Oct. 1, and Mr. Fulcher won the sales leadership award. While they were winning these awards, they were cornering more than 25 per cent of all the household refrigerator business in El Paso.

If it's any object lesson to you, they all read ELECTRIC REFRIGERATION NEWS. Mr. Fulcher himself has been reading the paper "religiously" for several years, and finds it most helpful in training and directing his sales force.

## El Paso, Texas

Gateway to Mexico, footstool of the Rockies, trading post for the cow and sheep country (with a radius of 800 miles), shipping terminal for adjacent fertile valleys (where they cut alfalfa five times a year), last stand of the cavalry, happy hunting grounds for the electric range salesman, El Paso is little visited by the tourist trade, but one of our most picturesque cities.

El Paso means "the pass" in Spanish, and takes its name from the closeby spot where the Rio Grande flows through a pass in the mountains.

Up in the pass proper is the first grist mill built in the Southwest (that was sumpin' in those days, if you know your pioneer American history), and the remains of the old Fort Bliss.

Modern Fort Bliss, on the mesa above El Paso, is America's biggest cavalry plant, and one of the greatest concentrations of horse military to be found anywhere in the world. It is stationed at a most strategic point on the Mexican border—just in case.

Near Fort Bliss, in Austin Terrace, are Loretto College and Radford School for Girls.

Right in the heart of El Paso is the San Jacinto Plaza, where you can see Old Blue Whistler, brass cannon used in the Mexican War. This cannon was swiped right from under the noses of El Pasoans by Madero rebels, and used against the federales during the Madero revolution. After they had finished with it, they brought it back!

Opposite the modern court house, in City Hall Park, is a cannon made in Mexico from a car axle, and presented to the city by the rebels at the close of the revolution.

And that, ladies and gentlemen, is just about all the blood and thunder we have for today's lesson.

The rest of our study of El Paso—now that we have glimpsed its commercial aspects and recalled its proximity to Mexican scraps, will be devoted to a quick glance at the surrounding scenery, and then—to Juarez!

As for the scenery, the most of the best may be seen by touring Rim Road and Scenic Drive, during which you can make an optical sweep over El Paso, Mexico, and the adjacent verdant valleys, all in gorgeous panorama, with sturdy, sharply hewn mountains for a backdrop.

Once upon a time this highway was traveled by covered wagons and stagecoaches. The '49ers called it Butterfield Trail.

## Wagner Motor Officials Tell Editor What's What Abroad



These Wagner Electric Co. officials gave the editor some tips on foreign markets. Left to right: C. B. Dietrich, advertising manager; A. D. Pool, George Taubeneck, M. H. Nelson, and T. A. Wallace, export manager. This picture, taken in St. Louis, and those below, taken in Tulsa and Dallas, arrived too late to be included with the reports from these cities.

Keep going far enough, and you'll come to a couple of oil refineries and a big copper mine. Also located near here is the College of Mines and Metallurgy of the University of Texas.

El Paso is right proud of its Sun Carnival "the first annual" (a phrase which always sounds a trifle optimistic) one of which was held this year, featuring an 81-float Pageant of History, and a post-season football game.

## The Rio Grande

Few rivers sound so romantic to a generation of Americans brought up on Western movies and fiction as the Rio Grande. It isn't much to look at, though. You cross it to get into Juarez, Mexico, you look once, and then you shift your glance quickly.

The Rio Grande has always been associated with outlawry and deeds of derring-do. There isn't much derring-do around there any more, but there's a right smart bit of smuggling. No guns, no fights, just trickery. As for example:

Two gangs of small boys will get into a fight, starting on opposite banks of the Rio Grande, throwing rocks and mud at each other, and making a lot of racket.

During the melee one of the boys on the Mexican side trades places with a ragamuffin on the American side, and lo! a valuable load of "snow" or other dope has crossed the border.

## Juarez, Mexico

A few decades back the Rio Grande decided to wind in a different direction, which sudden decision gave some territory which had been Mexican to the United States (the Rio Grande is the dividing line).

Mexico disputes the right of the river to cede its territory to the United States, however, so this Cham-

zal district remains mutually claimed land.

Immediately after you have passed the sentries and inspection posts on each side of the international bridge, you walk into a clutter of leeching and mooching Mexicans, who want to take you to peep shows, to houses, to French "circuses," to cabarets, to sell you rings and nicknacks, or just to beg pennies. They hang on and get in your path—and your hair—with a persistence which should be rewarded were it not so annoying.

This first street is lined with cabarets, the two best being right at the head of the street. Down further, and into the side streets, you come across the ones which put on the disgustingly improper "educational" shows.

Souvenir shops and quick-photograph studios (getting their pictures "took" is a Mexican weakness) fill up the rest of the streets.

One honky-tonk into which we dropped was run by a young Detroit, who wanted to talk all night, it seemed. He claimed to be the only man alive who had ever shot pheasants in Detroit's Belle Isle zoo, retrieved and eaten them. He did it with a BB gun.

To us the most interesting spot in Juarez was the market place, whither Mexican truck farmers and fishermen come with their wares to spread out before the quick eyes of the bargaining shoppers.

Its stalls are rented out by the city (it is a huge under-one-roof building, municipally owned and operated) for a small daily fee. There you can buy more varieties of fruits, vegetables, fish, meats—and native objets d'art—than you ever thought existed.

Pastries of the empanada order, gorditas (a sort of hamburger), strange candies—paletas, cajetas, leche quemada, mangos, peppered cheeses, pomegranates, rich Mexican chocolate,

pulque, enchiladas, tacos, and, of course, tortillas and hot tamales, are all there in rich profusion.

Up from the market place a few paces is the old mission, built in 1659, which has seen almost as much fighting in its day as praying and bead-counting.

We visited it at twilight, during a sombre, candle-lit service, and thought it rather dolorous inside, although its external form was soothingly simple and quiet against the fading skies.

Jesuits built this old church. Bells in the tower were made by hand in Spain, and carried via mule train inland from the coast. Ceiling is hand-carved, done by Mexicans under the direction of Jesuit priests. During the last revolution the federales under Diaz fought from the roof of this mission.

Not far from the church is the "juzgado," or jail, which word, we suppose, may have given rise to the American slang terms "jug" and "hoosegow." Once political prisoners were confined there prior to the bandana blindfold and firing squad.

Now it is used as a sort of purgatory, where arrested individuals stay while awaiting trial and sentence, and for a year before going up to the Big House.

Mexican "justice" is as expeditious as it is simple. A state's attorney brings the prisoner before a judge, who hears the evidence, and passes sentence. No jury, no delays—and, possibly, not much justice.

No roof has the "juzgado." The walls are too high to leap, and too smooth to scale. They are about a yard thick, made of 'dobe' (mud and straw slow-baked in the sun).

Tough customers sleep on the cold rock floors of the hallways. Those who behave well are given open-air cells with beds and individual rattios. They are fed just enough tortillas (pounded corn cakes) to keep them from liking the place so well that they might want to come back.

The "cooler" for drunks is something like a polar bear's den in a zoo. Made of rock and 'dobe, with water running in rivulets down the sides at all times, it's a pretty good refrigerator even if it does have an open top. Through a speakeasy-size grilled opening a fire hose can be played upon the more recalcitrant inmates.

There's a bull ring in Juarez, too, where agile toreadors and bandilleros enrage charging bulls while the natives cheer and hope for some gore. No show the day we were there.

Once this Mexican border town was known as Paso del Norte (northern pass), but after the Mexican Abraham Lincoln, Benito Juarez, made his headquarters there and became President, the town renamed itself in his honor.

During the Madero Revolution, which began in 1910, Juarez was more or less a center of activities. It was Madero's headquarters, and later those of General Pascual Orozco. First provisional capitol of the revolution was established in the old customs house there.

Villa made it his provisional capitol, too, during his revolution.

Battle scars may still be seen on many of the buildings. But today, although lowering ominous, there are no signs of eruptive violence in Juarez. It's simply a Mexican trading post and importing inlet; also a tourist penny-catcher.



The editor was a "Sunday visitor" in Tulsa, where these photographs were taken. (1) Mason Electric Co., Crosley-Leonard dealerships, however, was right on the job and R. Eisenhardt and R. L. Mason were getting ready to plan their next week's work. (2) Oklahoma Tire & Supply Co., Frigidaire. (3) Norge refrigerators and gas ranges, Grunow radios. (4) Nelson Electric Supply Co.



(1) George Taubeneck looks in on a well-lighted General Electric display in a Dallas showroom. (2) Small but mighty: from this tiny warehouse office, Frigidaire's branch does the best business in the Dallas territory. M. B. Lane and E. S. Hagler are in the picture. (3) Salesmanager Dick Richardson of Electric Household Appliances, G-E distributor, gets a report on his men's night calls.

## Fertile Fields in Foreign Lands for Refrigerators

Department of Commerce  
Bureau of Foreign and Domestic Commerce  
Washington  
January 28, 1936.

**Publisher:**  
I very much appreciate your letter of January 20, regarding the around-the-world trip of your editor, George F. Taubeneck.

Foreign countries offer a fertile field for the products of the refrigeration industry and I feel certain Mr. Taubeneck's intimate knowledge of all phases of the subject will result in the collection of foreign market information of incalculable assistance to the American manufacturers. Despite severe economic conditions and trade restrictions, it is indeed gratifying to know that our exports have moved ahead each year. Attached is a sheet giving comparative figures for the years 1934 and 1935. It is interesting to note that the number of commercial units exported was less in 1935, however, the value was greater in 1935 than in the preceding year. Last year we established a separate export class for air-conditioning equipment, including the commercial and unit types. The preliminary figures for the twelve months ending December totaled \$320,558.

I am pleased to know that Mr. Taubeneck will avail himself of the facilities of our offices located in cities on his itinerary. Enclosed is a letter of introduction to our office at Sydney, Australia. We are writing to our other offices on the itinerary and you may rest assured every facility will be placed at his disposal.

If I may be of further assistance in any way, please do not hesitate to write me direct or through our Detroit District Office. Upon your next visit to Washington, I hope you can find it convenient to call upon me.

ANDREW W. CRUSE,  
Chief, Electrical Division.

### EXPORTS OF ELECTRIC REFRIGERATORS

		Number	Value
Household refrigerators	(1935)	119,845	\$9,354,237
	(1934)	101,366	8,180,000
Commercial, up to 1 ton	(1935)	20,815	1,976,005
	(1934)	22,136	1,916,553
Parts for refrigerators	(1935)		3,971,919
	(1934)		3,474,779

## Schedules for Passengers and Mail

For San Francisco, Vancouver, Honolulu, Samoa, Fiji, Auckland, Sydney and Melbourne

Sailings	Vancouver	Victoria	Honolulu	Suva	Auckland	Sydney
Southbound	Leave	Leave	Ar.-Lv.	Ar.-Lv.	Leave	Leave
	10 a.m.	5 p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.
Niagara	Feb. 26	Feb. 26	Mar. 4	Mar. 13	Mar. 17	Mar. 21
Aorangi	Mar. 25	Mar. 25	Apr. 1	Apr. 10	Apr. 13	Apr. 17
Niagara	Apr. 22	Apr. 22	Apr. 29	May 8	May 11	May 16
Aorangi	May 20	May 20	May 27	June 5	June 8	June 13
Niagara	June 17	June 17	June 24	July 3	July 6	July 11
Aorangi	July 15	July 15	July 22	July 31	Aug. 3	Aug. 4

Sailings	Sydney	Auckland	Suva	Honolulu	Victoria	Vancouver
Northbound	Leave	Leave	Ar.-Lv.	Ar.-Lv.	Ar.-Lv.	Ar.-Lv.
	4 p.m.	7 a.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.
Aorangi	Feb. 27	Mar. 2	Mar. 3	Mar. 6	Mar. 13	Mar. 20
Niagara	Mar. 26	Mar. 30	Mar. 31	Apr. 3	Apr. 16	Apr. 17
Aorangi	Apr. 23	Apr. 27	Apr. 28	May 1	May 8	May 15
Niagara	May 21	May 25	May 26	May 29	June 5	June 12
Aorangi	June 18	June 22	June 23	June 26	July 3	July 9
Niagara	July 16	July 20	July 21	July 24	July 31	Aug. 6

Steamer	San Francisco	Los Angeles	Honolulu	Pago Pago	Suva	Auckland	Sydney	Melbourne
	Leave	Leave	Arrive	Ar.-Lv.	Ar.-Lv.	Ar.-Lv.	Ar.-Lv.	Arrive
Monterey	Mar. 3	Mar. 4	*Mar. 9	Mar. 14	Mar. 17	Mar. 20	Mar. 23	Mar. 27
Mariposa	Mar. 31	Apr. 1	*Apr. 6	Apr. 11	Apr. 14	Apr. 17	Apr. 20	Apr. 24
Monterey	Apr. 28	Apr. 29	*May 4	May 9	May 12	May 15	May 18	May 22
Mariposa	May 26	May 27	*June 1	June 6	June 9	June 12	June 15	June 19
Monterey	June 23	June 24	*June 29	July 4	July 7	July 10	July 13	July 17
Mariposa	July 21	July 22	*July 27	Aug. 1	Aug. 4	Aug. 7	Aug. 10	Aug. 14

\*Sails for Pago Pago on date of arrival.  
†The actual steaming time between Pago Pago and Suva is 37½ hours, but on account of crossing the International Date Line one day is lost.  
‡Steamer remains in Sydney approximately two days, then proceeds to Melbourne.

Steamer	Melbourne	Sydney	Auckland	Suva	Pago Pago	Honolulu	Los Angeles	San Francisco
	Leave	Leave	Ar.-Lv.	Ar.-Lv.	Ar.-Lv.	Leave	Arrive	Arrive
Mariposa	Feb. 29	Mar. 4	Mar. 7	Mar. 10	Mar. 11	Mar. 16	Mar. 21	Mar. 23
Monterey	Mar. 28	Apr. 1	Apr. 4	Apr. 7	Apr. 8	Apr. 13	Apr. 18	Apr. 20
Mariposa	Apr. 25	Apr. 29	May 2	May 5	May 6	May 11	May 16	May 18
Monterey	May 23	May 27	May 30	June 2	June 3	June 8	June 13	June 15
Mariposa	June 20	June 24	June 27	June 30	July 1	July 6	July 11	July 13

†Steamer is in Sydney approximately two days, except as may be otherwise indicated.  
‡The actual steaming time between Suva and Pago Pago is 37½ hours, but on account of crossing the International Date Line one day is gained.  
§Steamers from Pago Pago arrive on date of sailing.



A sidelight on the editor's trip: blackjack and roulette games "in the back room" at Coalgate, Okla., snapped under difficulties.

## Refrigeration News Is Widely Read in London

York Shipley, Ltd.  
Refrigerating Machinery  
Head Office and Works  
North Circular Road,  
Welsh Harp N.W. 2, London  
Manchester, 333 Corn Exchange Bldgs.  
New York, 42nd St. & 2nd Ave., Brooklyn  
Barcelona, Consejo De Ciento 471A 475  
Paris, 8e:26 Rue De La Pepiniere  
17th January, 1936.

Dear Sirs,  
Further to your letter of the 26th November, we should be pleased to know when we may expect the visit of your Mr. George Taubeneck.

J. B. FARISH, Managing Director.

York Ice Machinery Corp.  
York, Pa.  
January 27, 1936.

Copy of letter to  
George F. Taubeneck, Editor,  
Electric Refrigeration News,  
c/o Refrigeration (India) Ltd.,  
62 Hazra Road, Calcutta, India.

Being a representative of York Shipley, Ltd., London, and also being in York, Pa., in conversation with Mr. Bruce McNaught, we thought it would be a good idea to write you in answer to your communication which I received from you sometime ago in London. This letter is to convey to you that I will be most anxious and happy to extend any service and courtesy within my power in England or in the Hague.

I notice in the itinerary in the ELECTRIC REFRIGERATION NEWS of January 15, that you are going around the world first and will stop in Europe on your way home, but we are not quite clear as to whether you will stop in the Hague or London first.

My address is Care of York Shipley, Ltd., North Circular Road, London, and the cable address is "Yorshipli."

As the ELECTRIC REFRIGERATION NEWS is widely read in London, you can be sure of a hearty welcome.

If you can in any way let me know of your arrival, I should be greatly obliged.

J. BENNETT FARISH,  
Managing Director.

## How to Address the Editor Enroute Around the World

By the time this issue reaches most readers, it will be too late to send regular mail to Mr. Taubeneck at Singapore by the westward route since the last available ship, the S.S. *President Adams*, sails from San Francisco Feb. 14. It goes by way of Japan and China arriving in Singapore March 21. Letters addressed to Mr. Taubeneck, received at the News office during the past week, have been forwarded to him on the *President Adams*.

There are two air mail lines from Europe to Singapore, Straits Settlements. One starts from Amsterdam, Holland, and the other from London, England.

It takes five days for a letter to

travel from Amsterdam to Singapore and postage to the amount of 25¢ per one-half ounce must be added in addition to the regular postage of 5¢ per ounce.

The London-to-Singapore air mail takes eight days and 30¢ per one-half ounce must be added in addition to the regular postage.

Air mail letters to Mr. Taubeneck may be addressed in care of H. C. Faxon, The Borneo Co., Ltd., Finlayson Green, Singapore or in care of E. S. Hebditch, General Electric Co., Ltd., 12 Battery Rd., Singapore.

Air mail letters may be sent by either of these routes beyond Singapore to Batavia, Java (arriving one day later), in which case the extra

postage is 29¢ per one-half ounce via Amsterdam and 35¢ per one-half ounce via London.

Mr. Taubeneck may be addressed in care of L. H. C. Beerstecher, International General Electric Co., Prinsen Straat 21, Batavia, Java, Dutch East Indies. (Mail should arrive before March 26.)

Regular mail dispatched eastward should be addressed to the editor in care of Ahmed A. Fazelbhoj, New Queen's Rd., Bombay, India, if sent in time to arrive before April 24.

Mail to arrive before May 1 should be addressed in care of Max A. Greenburg, manager, Palestine Branch, British Thomson-Houston Co., Ltd., 26 Gruenberg St., Tel Aviv, Palestine.

# The New PELCO

## Electric Beverage-Food COOLER

offers EVERYTHING you need to MAKE MONEY!

**A New IDEA**  
**A New MARKET**  
**A REAL Unit**  
**A PROVEN Merchandising Plan**  
**The RIGHT Prices**  
**A Sound FINANCING Plan**

Here's a unit that is decidedly different—in appearance, performance, and adaptability.

It opens a new market for refrigeration sales—restaurants, taverns, road houses, refreshment stands, billiard parlors, bowling alleys, resorts, cigar stores, delicatessens, hotels, bakeries, creameries—every place that serves bottled beverages and food.

### NEW Cooling Principle Enables PELCO to OUT-PERFORM the Field!

During the refrigerating cycle, ice forms around the sides of the upper compartment. During the off-cycle, this ice drops down into the water. Surrounded by ice-cold water, bottles are subject to rapid heat transfer—cooled from room temperature to 40° in 30 minutes. ALL bottles stay equally cold.

Pelco leads in ADAPTABILITY. Plugs into any light socket. Nine stages of cold control. Instantly adjusted for any temperature. PELCO is easily moved about.

Cut in on REAL RETURNS for your Sales Efforts

Clip this coupon for FACTS. Get into a NEW MARKET with a NEW IDEA and all the other factors you need to build volume sales at a profit.

Refrigerator Division, Desk A  
Portable Elevator Mfg. Co.  
Bloomington, Ill., U.S.A.  
Gentlemen: Rush the facts. I want the best results for my sales efforts.

Name .....  
Street ..... City ..... State .....

{ C. A. RICHARDS, Inc., Exclusive Distributors for Export, 30½ East }  
{ 45th St., New York, U.S.A. Cable Address CARMUSE, New York. }

**Refrigerator Division**  
**PORTABLE ELEVATOR MFG. CO.**  
ESTABLISHED 1899  
BLOOMINGTON, ILLINOIS

## Home Economists Get New Ideas For Sales Promotion & Cooking Schools at Kelvinator Meeting

By Winifred B. Hughes

DETROIT—The 65 home economists who attended Kelvinator's third annual home economists' convention, held here recently, took back to the utilities and distributorships they represent a host of new home-service promotional plans and sales ideas, and a comprehensive picture of the entire Kelvinator program for 1936.

During the three days they spent at the Kelvinator factory, the home economists viewed the new refrigerator, range, and water-heater lines, and heard company officials explain Kelvinator's domestic, commercial, and air-conditioning merchandising plans for the year, besides witnessing cookery and refrigeration demonstrations and hearing the complete Kelvin Kitchen program.

### Introduces Kelvin Kitchen Staff

Miss Eva McPherson, Kelvinator home service director, opened the convention's first meeting, held in the Italian Gardens of Book-Cadillac hotel, by introducing her Kelvin Kitchen staff, consisting of Dorothy Covert, Beatrice Prior, Alice Cooley, Irene Mulligan, Polly Gade, Lucille Stonell, Roxy Speed Enfield, and Sibell MacKenzie.

President George Mason welcomed the home economists when they assembled for their first meeting at the factory Monday afternoon.

Kelvinator considers each one of the women present among the foremost salesmen in its distributing organization, said Godfrey Strelinger, general assistant to the vice president in charge of sales, in expressing the company's appreciation of the home economists' work during the past year.

### Presentation of Product and Plans

With this as the opening wedge, the afternoon program included the presentation of the 1936 Kelvinator refrigerator line by V. J. McIntyre, domestic sales manager, and outlines of the national and domestic advertising and sales-promotion programs by S. C. Mitchell, director of advertising and sales promotion, and Walter Jeffrey, domestic advertising and sales-promotion manager.

A trip through the factory Tuesday morning was followed by a model refrigeration demonstration, in which Miss Dorothy Covert of Kelvin Kitchen staff displayed how easily the major selling points for electric refrigeration could be woven into the home economists' demonstration.

The remaining part of Tuesday's program centered around Kelvinator's allied products, with S. V. Altmont presenting the range and water-heater line as the first feature.

Two cookery demonstrations concluded the day's program. Miss Celia Bush of the Estate Stove Co. gave the home economists present ideas on how they might conduct gas cookery demonstrations, preparing the food as she talked. Then Miss Alice Cooley of

Kelvin Kitchen showed how foods prepared in an electric range demonstration might be effectively displayed through the use of a long covered table with a mirror placed behind it.

W. E. Saylor told the economists how they could be promoters of promotional pieces issued at Kelvin Kitchen, and explained the contest in connection with the formation of the new "Klara Kelvin Klub."

Following an explanation of the "meter-ator" selling plan, J. K. Knighton, head of the air-conditioning department, discussed this equipment, while J. A. Harlan, commercial sales manager, pointed out that as an expert in home management, the home economist must also concern herself with automatic heating, air-conditioning, and commercial refrigeration equipment.

### Tie in with Nema Program

Vice President H. G. Perkins gave the convention a word picture of the progress which has been made in the refrigeration industry during the last few years, and stressed the position which Kelvinator now occupies in the refrigeration field.

When Kelvin Kitchen activities were unfolded Wednesday afternoon, Miss McPherson discussed the kitchen modernization school—the activity to tie in with the nation-wide kitchen-modernizing plan sponsored by National Electrical Manufacturers Association and Edison Electric Institute. "I believe this will be the leading promotion for 1936," said Miss McPherson. "It is to be backed nationally, and you cannot afford to neglect it in your programs for the year."

Explaining the plan, Miss McPherson said that it was similar in set-up to that of the regular cooking school, with the difference that this school is put on in cooperation with different merchants, such as paint dealers, cabinet companies, furniture stores, etc.

### Display Coach Idea Explained

Typical of other promotional methods which various guests at the convention told about was Miss Fern Snider's account of the two display coaches which the home service department of Georgia Power Co. has used for putting on refrigeration and range demonstrations in small towns.

"Each coach is large enough to accommodate 20 or 25 persons, and is so completely equipped that we can wash our dishes following a refrigeration or cookery demonstration," she said.

Much interest centered around the three miniature kitchen set-ups which, Miss McPherson said, the home economist could use as a successful attention-getter in connection with home modernization schools. Narrow, 5-in.-high boards formed walls that enclosed replicas of scientifically planned "modernized kitchens," furnished with

## And Over Here Is the Start of the Assembly Line, Guide Tells Home Economists on Tour of Kelvinator Plant



Home economists on a tour of the Kelvinator plant during their recent meeting. In the foreground, left to right: Mary Heller, Wright Shoffner Co., Port Huron, Mich.; Emma Pabst, Good Housekeeping Shop, Detroit; Margaret Dunning, Kelvinator Boston branch; Ethelyn Todd, Rumford Falls Light & Water Co., Rumford, Me.; Delphine Lorsche, Public Service Co. of New Hampshire; and Emma Maurice Tighe, Boston Edison Co.

cardboard refrigerator, range, water heater, and cabinets.

"These miniature set-ups will not only arouse the curiosity of women attending your school, but will also give them a clear idea of what may be done with their kitchens," Miss McPherson said. She told her listeners where they might obtain the equipment.

Lucille Stonell of Kelvin Kitchen, in discussing the Users' and Prospective Buyers' classes—another of the chief promotional activities in Kelvin Kitchen's program—said that from one of these classes in which there were 19 persons present (11 of whom were prospects), seven sales resulted.

H. W. Burritt, vice president in charge of sales, summed up points in Kelvinator's merchandising program, and then lighted the candles on the three-tier birthday cake, containing three candles to commemorate the number of national conventions held by this group.

Formation of a national club for Kelvinator home economists, called the "Klara Kelvin Klub," took place at a dinner at the Book-Cadillac hotel.

Purpose of the club is to foster greater activity among the members and to provide, through "Sell-O-Gram," the club's monthly publication, a medium for the exchange of ideas. A five months' contest for club members was announced.

### Home Economists Present

Attending the meetings were: Mrs. O. B. Austin, Duke Power Co., Hickory, S. C.; Celia Bush, Estate Stove Co., Hamilton, Ohio; Margaret Burge, S. C. Carolina Power Co., Charleston, S. C.; Mrs. Frances Burton, Duke Power Co., Greensboro, N. C.; Peg Campbell, Gambill Motors, Chicago; Mrs. Ruth Carmen, Elmira Light, H. & P. Co., Elmira, N. Y.; Greta Dent, Geo. Dent Radio Co., Bay City, Mich.; Margaret Doughty, Carolina Sales Co., Greenville, N. C.; Margaret Dunning, Kelvinator Boston Branch, Cambridge, Mass.; Mrs. Mildred G. Day, Kellogg's, Battle Creek, Mich.

Mrs. Carolyn Ely, Kelvinator Boston Branch, Cambridge, Mass.; Thyra Franklin, Kelvinator Buffalo Branch, Fillmore, N. Y.; Blanche Flynn, Commonwealth Edison, Chicago; Mary G. Heller, Wright Shoffner Co., Port Huron, Mich.; Betty Garrett, Williams Distributing Co., Clarksburg, W. Va.; Mrs. Marion S. Gottlieb, Graybar Electric Co., Cincinnati; Mrs. Margaret Hutte, Alabama Power Co., Montgomery, Ala.; Miss Catherine Hess, Earle Rogers Co., Wheeling, W. Va.; Miss Johnny Lee Hulsey, Alabama Power Co., Birmingham, Ala.; Mrs. M. F. Hanley, Cumberland County P. & L. Co., Cortland, Me.; Marion F. Hafey, Geo. Dent Radio Co., Bay City, Mich.

Grace Johnston, Moore & Stewart, Inc., Gastonia, N. C.; Mabel Kirkland, South Carolina Power Co., Charleston, S. C.; Mrs. B. Lage, Tri-State Electric Co., Sioux Falls, S. D.; D. Lerschen, Public Service Co. of N. H., Manchester, N. H.; Blanche Mitchell, State Dist. Co., Indianapolis; Wilda Martin, North Lumber Co., Kalamazoo, Mich.; Letha H. MacLaughlin, Central Public Service, Middlebury, Vt.; Mrs. Frank Moore, Duke Power Co., Greenville, S. C.; Addie Malone, Duke Power Co., Winston Salem, N. C.; Celia Maccani, Commonwealth Edison, Chicago; Marjorie Miller, Public Elec. Light Co., St. Albans, Vt.; Lucy Maltby, Corning Glass Co., Corning, N. Y.; Norma Niehoff, Kelvinator Buffalo Branch, Buffalo; Mabel Nimmo, Graybar Elec. Co., Minneapolis; Mrs. Sue Prevost, Duke Power Co., Anderson, S. C.; Emma L. Pabst, Good Housekeeping Shop, Detroit; Ruth Polsen, Boston Edison Co., Boston; Pauline Schrader, Consumers Power Co., Cadillac, Mich.; Franc Robinson, Hydro Shop-Utilities, Windsor, Ont.; Ada Bessie Swann, Women's Home Companion, New York City.

Mrs. M. E. Shaw, N. H. Gas & Electric Co., Portsmouth, N. H.; Arlene Spencer, Garlock Sales Co., Lansing, Mich.; Mrs. Mildred Seaber, Duke Power Co., Salisbury, N. C.; Ethelyn E. Todd, Rumford Falls L. & W. Co., Rumford, Me.; Emma M. Tighe, Boston Edison Co., Boston; Elizabeth Wright, Krich-Radisco, Inc., Newark; Bee Wormley, Mueller Lumber

Co., Davenport, Iowa; Florence M. Williams, Graybar Electric Co., Omaha; Catherine D. Warne, Bohman-Warne, Inc., Hagerstown, Md.; Fern Snider, Georgia Power Co., Atlanta; Helen Farwell, Farwell Sales Co., Flint, Mich.

Phyllis Harris, Kelvinator Detroit Branch, Detroit; Peg Presnell, Detroit Edison Co., Detroit; Faye I. Hamilton, McCall's Magazine, New York City; Margaret Mitchell, Wear-Ever Aluminum Co., New Kensington, Pa.; Eva McPherson, Director of Home Economics, Detroit; Alice Cooley, Dorothy Covert, Bea Prior, Polly Gade, Lucille Stonell, Roxy Speed Enfield, Sibell L. MacKenzie, and Irene Mulligan, Kelvin Kitchen, Detroit.

### Potomac Utility Employs User-Education Plan

WASHINGTON, D. C.—Veering away from emphasis on prospects, The Potomac Electric has attracted large groups of women to cooking classes and meetings with a program of user-education under the direction of its Home Service Bureau.

Organized about 11 years ago, when the Potomac Electric merchandised, the bureau originally promoted range and refrigerator sales, but since the company's reorganization a year and a half ago the policy of the department has been changed to promote electrical appliances for all dealers.

That close contact with new and old range users prevents sales losses is the premise of Miss Mary Turner, original director of the bureau and now in charge of its Colonial Electric Home.

Three classes a week, held in the Electric Home for users, draw crowds averaging from 75 to 100 although the home was planned to accommodate only 50 or 60. One day and one night class is held each week for negro maids. Miss Turner directs all of her meetings, cooking schools, home calls and distributed material toward creating enthusiasm among users. She has increased her staff to eight members this year.

### Home Economist Promotes G-E Sales in Schools

WATERBURY, Conn.—Home economics departments and project developments in public schools have been two media through which Miss Hazel Fletcher, home service director of Modern Home Utilities, Inc., has told the story of the General Electric kitchen in this vicinity recently.

Two hundred students of the Glastonbury high school heard Miss Fletcher's talks during the three 80 minute class periods in which she was allowed to demonstrate.

With Connecticut celebrating its tercentenary program, Middlebury school children were also attracted to the project in which a kitchen of 1600 was effectively contrasted with a 1936 kitchen, completely equipped with G-E appliances. During the entire period of the exhibit, the display was used as a background for large Parent Teachers meetings.

An invitation by the Manchester Electric Co., manufacturing competitive makes of refrigerators and ranges, to Miss Fletcher to conduct the annual cooking school, gave her an additional opportunity to use the complete G-E electric kitchen for demonstration. She has also conducted a school in Bristol, Conn.

### New S-W Outlet Named

OKLAHOMA CITY—The Southwest Radio & Equipment Co., 704 North Broadway, has taken over the Stewart-Warner distributorship which was previously held in this territory by the Oklahoma City Hardware Co.

## Advice on Colors for Kitchens Given to G-E Salesmen

CLEVELAND—Answers to housewives' appeals for kitchen color suggestions are offered G-E appliance salesmen by R. Hookway of the Sherwin-Williams Co. in a recent company bulletin.

When acquisition of a new appliance has made the rest of the kitchen look shabby, Mr. Hookway says that the salesman should expect such questions as:

What colors should be used for kitchen walls? Should they be light, dark, or neutral? What shades will look best with the white refrigerator or range? What about contrasting trim?

Since such a user's house is likely to serve as a local "show-room," the salesman should be prepared to make a reply that will serve not only to establish good-will but will have eye-appeal and be efficacious in telling the story of modernity in the kitchen, points out Mr. Hookway.

Allowing for differences in taste, Mr. Hookway says there are still some fundamental color rules in painting a kitchen. Kitchen walls, especially since so much lighting is now indirect, have a job of light-reflecting.

This matter of reflection is of course even more essential in kitchens without much light in the first place. New York apartments, for example, are often on dark ventilator shafts.

Dark color tones, the Sherwin-Williams Co. has found, absorb light rather than reflect it—a fact which should be suggested to the housewife seeking something dark and different. The following table shows how much light each color reflects:

White, 89 per cent; Ivory, 82 per cent; canary yellow, 77 per cent; cream, 77 per cent; caen stone, 76 per cent; orchid, 67 per cent; cream gray, 66 per cent; ivory tan, 66 per cent; sky blue, 65 per cent; buff, 63 per cent; pale green, 59 per cent; shell pink, 55 per cent; bright sage, 52 per cent; silver gray, 48 per cent; clive tan, 43 per cent; forest green, 22 per cent; cocoanut brown, 16 per cent; black, 2 per cent.

The ceiling should be kept as light as possible; and if the colors do not seem stimulating enough, a contrasting band of red, blue, or Chinese red will relieve the simplicity. The paints which reflect most light are: in semi-gloss paint, ivory white, 78 per cent; cream, 73 per cent; canary yellow, 75 per cent; orchid, 68 per cent; and cream gray, 63 per cent; in flat wall paint, ivory, 82 per cent; caen stone, 76 per cent; cream, 77 per cent; canary yellow, 77 per cent; cream gray, 66 per cent; and orchid, 67 per cent.

Wall finishes in various colors that will wash with soap and water as easily as dishes, keeping an all-electric kitchen spotless, are being manufactured today.

**"GENUINE DETROIT"**  
HEATING, REFRIGERATING AND  
AIR CONDITIONING CONTROLS  
  
**DETROIT LUBRICATOR COMPANY**  
DETROIT, MICHIGAN, U.S.A.  
Canadian Representative—RAILWAY AND ENGINEERING  
SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg

*Efficient · Economical · Reliable*

**for BAR REFRIGERATION**

**Copeland**  
COMMERCIAL  
REFRIGERATION

MORE and more bar installations are being equipped with Copeland units each month.

This preference is no mere accident. Today's buyers are no longer choosing equipment casually. Nor do they take performance for granted. Copeland Commercial Refrigeration offers the informed buyer exactly what he demands—built-in efficiency—built-in reliability—built-in economy—built-in performance. It is hard to resist such worthwhile features. You can do better with this great line. A few territories available. Write

**COPELAND REFRIGERATION CORPORATION**  
Manufacturers of a complete line of Household and Commercial Refrigeration  
Holden Ave. at Lincoln . . . DETROIT, MICH.

**Copeland**  
DEPENDABLE Electric REFRIGERATION

## Plans for Operation of Kitchen Modernizing Bureau Complete

(Concluded from Page 1, Column 3)

affect not only the manufacturers and sellers of electrical appliances, electrical wiring and contracting supplies, and electrical distribution and metering equipment, but also involves electrical contracting and labor for installation and has a vital bearing on the increase of central station load.

Originators of the program feel that inevitably a national program of kitchen modernizing offers benefit to non-electrical interests, among which are realtors, banks, building and loan and other finance concerns, builders and architects, and other industries including hardware, plumbing, floor covering, paint, vitreous and other wall finishes, kitchen cabinets, furnishings and utensils.

The broad name under which the bureau operates has been chosen so that local organizations may choose whether they will admit to membership outside interests, not electrical, and so that the movement may be open to endorsement by the FHA and other government agencies.

Since permanent, national-wide distributing organizations have built up public acceptance of electric refrigeration and other electrical kitchen equipment, the prospectus explains that this movement was inaugurated to take the next national step of consolidation—to wrap up together all items of electrical merchandise that class themselves as kitchen equipment, "to do them up in an attractive package, which will promote and sell them in a single effort."

A modernized kitchen, the book estimates, may easily represent from \$300 to \$1,000 or more of new electrical equipment which can be afforded by at least one in every four wired homes. For central-station load, one home with an electrically modernized kitchen consumes several times the kilowatt hours used by the present average home.

Taking into consideration that few families can afford to transform their obsolete kitchen into an electrified kitchen in one quick step, the bureau has adopted the step-by-step selling motto. Having established the idea of a modernized kitchen in the housewives' minds, the "package idea" will have done its work and the entire electrical industry will benefit substantially and enduringly.

Funds for national promotion and field activities, supplied by contributing electrical manufacturers through Nema, total between \$50,000 and \$60,000 assured for the first year of operation. Edison Electric Institute furnishes management, stands for overhead expense, and administers the funds under the budget approval of the executive committee.

### Allocation of Duties

The Institute will set up a new division in the commercial department, to execute the program under plans laid out by the executive committee. The head of this division, R. E. Barnes, will serve as manager of the bureau.

In the allocation of duties, the national chairman, George E. Whitwell, was named directing head of the entire movement; the executive committee is responsible for the approval of all plans, budgets, and determination of policies; the plan committee originates the promotional and publicity plans; and the national bureau manager is responsible for the functioning of the headquarters.

Each regional director is generally responsible for the bureau operation in his own territory, which may be either a limited geographical area or a large one. "Regional" lines are drawn principally with reference to conditions of electrical organization and distribution, rather than geographical or population factors.

### Duties of Regional Directors

Regional directors are all power company men experienced in organization work and with past cooperative activities in the electrical industry.

Duties of regional directors center in bringing about local organization active along practical lines. For this, they have the cooperation of the field staff, so that they won't be burdened with detail or large correspondence.

Field contact representatives will be available to aid regional directors, to address meetings, and to assist in establishing local organizations and maintaining interest.

Emphasizing the importance of local activities, the booklet calls attention to the fact that wide variations in local conditions make it inadvisable to prescribe any rules or patterns for local operation. Although great flexibility is to be allowed in naming the organization, the local groups will have one common object, to promote kitchen modernizing.

Local advertising and publicity will seek to establish the new kitchen idea and create general desire for electrically modernized kitchens. Programs should be of the type to merit the endorsement of any existing Electric Club or League or other industry

associations, local or national, the prospectus points out.

Suggesting a variety of organization forms, the booklet says that in a few cases the most desirable course will be the inclusion of the bureau's activities as an integral part of the Electric League, or clubs already existing.

There are also a number of cities where the previous organization of Electric Refrigeration Bureaus and Electric Cookery Councils provides a nucleus for the ready formation of a local Electric Kitchen Modernizing Bureau.

In certain areas the most effective operation may be one which covers the whole area and is not confined to any one city or community. In still other cases, the best results may be obtained through no formal organization at all, but simply through a mutual understanding and interest in the Bureau objectives by the local electrical fraternity and through their individual efforts to accomplish the objective.

### Local Bureau Membership

The membership of any local bureau may be as limited or as unlimited as desired, according to the prospectus. In general, it may include the utility company, electrical dealers, contractors, wholesalers, and manufacturer's agents.

It may also include department and house furnishing stores, or it's membership may be still broader, including home financing concerns, building contractors and architects, hardware and plumbing representatives, as well as men from other industries such as floor coverings, paint and other wall finishes, kitchen furnishings, and utensils.

Not only executives of contributing member companies, but employees were suggested as valuable to the local group. Among the active members it is suggested that any available home service women in the employ of the utility company, or other local interests, and domestic science teachers should be included.

### Draft Plan of Operation

As soon as the membership of the local bureau is aligned and it is known what funds there will be, it is recommended that a written plan of operation for the first full year be drafted, together with a budget.

Local newspapers and in some cases local radio broadcasting stations offer the most common means of acquainting the public with the modernizing theme, the booklet advises.

Model kitchens, open to the public, in which various brands of electric kitchen equipment on sale locally are displayed in rotation during the year, are effective promotional media.

In display rooms, department stores, showrooms, as part of a permanent home building exhibit, in vacant stores, or portable on trucks or trailers, the most effective model kitchen is one which is a practical working kitchen within the buying range of the many "better than average income" families, says the prospectus.

Should a local bureau wish to establish an office to serve as a center for public information and trade correlation, all general data about electric kitchens and information concerning the bureau would be available there.

### Kitchen Planning Service

In some cases, local bureaus with sufficient funds will want to establish a kitchen planning service, which is important as a link between interest in the idea and actual sales. If the funds are insufficient to permit employing the part time of a local architect or other competent talent, the local bureau will be limited to the use and re-adaptation of standard kitchen plans made available by the national bureau or by others.

In addition to special promotions and a few tie-up promotional aids the headquarters will issue promotional material for general use. No limit is set on the number of local bureaus spontaneously organized.

Since no national advertising is planned, a systematic effort to obtain wide free publicity will be made. Contributing manufacturers, utility companies, and retailers are expected to mention Kitchen Modernizing by Electrifying and the bureau in their own paid advertising. Headquarters will assist advertising departments by supplying facts, write-ups, and photographs wherever such material can be used for publication.

It is proposed to cover several hundred daily and weekly newspapers throughout the country with fortnightly publicity releases of popular interest. These releases are frequently to contain illustrations and the plan is to set each release in type, print proofs, and offer mats of the material on request, to be submitted to the newspapers by the utility, local bureau, or other interests.

Contact will be maintained with the principal national magazines, especially women's magazines, and home improvement periodicals in an

endeavor to get repeated stress on Kitchen Modernizing by Electrifying and to develop through their home economics experts new features of interest which may be used not only in their columns, but as part of the general publicity of the bureau.

Promotional endeavors, which will be designed to cover as broad a scope as possible, will be in three general classes: 1, means of interesting the general public; 2, plans and materials for the use of individual local bureaus; 3, tie-up materials for the use of individual local bureau members.

The materials to be used, with no definite time specifications, are:

1, Plan book, which will be distributed soon, outlining the bureau aims, organization, activities, and materials available. Approximately 20,000 of these books will be required, of which 2,500 will be mailed individually; the balance to be pro-rated among the contributing manufacturers for distribution to the trade.

2, Collections in booklet form of kitchen plans from manufacturers, magazine publishers, and other reliable sources.

3, Newspaper advertisements in mat form for ready adaption to localized use.

4, Window and counter displays.

5, Radio continuities.

6, A talking motion picture.

7, Direct mail materials.

8, Daily menus, based on electric cookery, table cookery, and electric refrigerator recipes.

9, Charts for talks and addresses.

10, Plans for activities among employees for modernizing their own kitchens.

11, A contest among central stations for meritorious effort in co-operating with bureau.

12, A general nation-wide promotional activity for the fall of 1936, to be announced at an appropriate time.

In order to facilitate promotional plans, the bureau will collect from all possible sources modernization plans, and will edit and collate them into some logical order.

A small easel sign bearing the slogan and emblem of the bureau, a small sign indicating bureau membership, and a lithographed cut-out for window and counter display will be available for showrooms, and windows.

Since the minimum number of radio sequences generally sold by radio stations is 13, each of 15 minutes duration, that number of continuities will be prepared, and if sufficient demand for the records is developed, they will be produced. The cost in such cases would be the net cost of the record plus shipping.

It is expected that the talent em-

ployed for these radio continuities will be household experts from leading household and women's magazines and from one or more utilities. A few of the talks may be by men in the electrical industry.

A talking picture, centered about kitchen modernizing by electrifying, 40 minutes in length, is available, and the production cost has been met by introducing into the picture a limited amount of advertising by non-electrical companies.

As a further promotional help, material for addresses has been prepared for field men and regional directors.

An emblem in the shape of a shield with the words, "Modernize—Electrify Your Kitchen" has been adopted and will appear on all promotional material.

A contest among local utilities is planned to further stimulate publicity. It will place special emphasis on the formation of Electric Kitchen Modernizing bureaus and upon their effective operation and the degree of dealer-utility cooperation attained. For this contest, utilities will be divided into two groups based on population of the communities served. The period will be for the year 1936, and prizes of \$300, \$200, and \$100 will be given for each group, or a total of \$1,200 for the two groups.



## was floored by a detail

GOLIATH, veteran of many a brutal and bloody battle, knew hand-to-hand combat from A to Z. But, like so many great warriors, he grew careless of details—and underrated the fury of a stone-laden sling shot and David's keen eye. ★ ★ ★ Unlike Goliath, Brunner engineers have for thirty years realized this constant threat of underrated details... details of construction which can so easily become the "monkey wrench in the machinery". ★ ★ ★ That's why Brunner Condensing Units and Compressors deliver such rugged service—they are built for it, right down to the smallest detail. Every unit of construction has sound engineering experience back of it. ★ ★ ★ Forty-one Condensing Units and eight Compressor models,

in a range from 1/6 H.P. to 15 H.P. afford a correct capacity Brunner for every type of installation. ★ ★ Brunner Manufacturing Company, Utica, N. Y., U. S. A.



The Brunner W-300... a smooth-running heavy-duty unit. Built over-size for extra wear. Water-cooled; 3 H.P.

SEND FOR YOUR COPY OF THE BRUNNER REFRIGERATOR CATALOG

# BRUNNER

Condensing Units and Compressors

## ELECTRIC REFRIGERATION NEWS

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FEBRUARY 12, 1936

## A Word of Warning

**D**URING recent weeks we have had reason to suspect that attempts are being made to take improper advantage of the Federal Housing Administration credit facilities. There have been symptoms of a nervous anxiety to work Title I of the National Housing Act for all that it is worth as quickly as possible. This tendency seems to be sufficient reason in itself to justify the feeling that the plan may not be entirely sound and that, sooner or later, it will be revised or discarded.

If the law is a good one (and opinions expressed by leading executives in a recent issue of the NEWS show a preponderance of favorable opinion), then it should certainly work out to the ultimate advantage of the low-income families for whom its benefits were primarily intended.

Furthermore, we do not hesitate to say that if the results of the plan are not in accord with the best interests of the public, and particularly that very large section of the public to which the refrigeration industry is looking for its future mass market, then such results can hardly be expected to prove helpful in the long run to the manufacturers and distributors of household appliances.

Let no reader construe the foregoing statement as an attack upon the Federal Housing Administration, or as an effort to oppose the proper use of any sound credit plans which will enable a larger section of the American public to enjoy the comforts and conveniences which are inherent in modern household equipment.

Note: See news report on front page (received since the above was written) announcing revised credit requirements of FHA.

On the contrary, our sole purpose is to sound a word of warning against misuse of government credit, or any other facilities which may be available for the legitimate purposes of the industry and its customers.

That such a warning is timely, one needs only to read the newspaper report of the stand taken by Judge Joseph A. Gillis of the Common Pleas Court in Detroit last week. Judge Gillis, who operates the court's conciliation division, which handles matters of defaulted payments, served notice on high-pressure instalment houses that if they induce citizens to buy merchandise beyond their ability to pay, that sellers may not look to the court to enforce unreasonably large payments on the debt.

Judge Gillis demonstrated his viewpoint in the case of a factory worker who had signed a contract for a \$271 purchase of a refrig-

erator and range after being "high-pressured" by three salesmen for a well-known Detroit dealer. After signing the contract, the buyer went to the store and begged them to take the goods and release him from the contract, but they refused.

Judgment had been obtained by the bank holding the notes and an effort was being made to garnishee the wages of the buyer.

During the court hearing it was shown that the buyer had earned approximately \$750 last year, that he lived in a \$6-a-month house, owed \$40 back rent, a \$90 grocery bill, and that he had three children to support. The Judge ordered the man to pay 50¢ a week on the contract.

The most startling statement was that of the Judge who said that of the 94,000 cases which passed through the Detroit courts last year, two-thirds were started by the same small group of high-pressure instalment sellers. Said the Judge:

"This court can't say what any man should or should not buy. There is nothing wrong with instalment selling itself, of course. The small man is entitled to credit the same as the big fellow. The trouble results when unscrupulous concerns use high-pressure methods to sell people merchandise they can't afford.

"The system is especially vicious in Detroit," said the Court, "because the automobile industry is seasonal. Wages don't flow uninterruptedly. During the period a man is working, he has to accumulate money to carry his family through an off period. If a man's money has to go mostly for payments on non-essentials, he is sunk."

Now we come to the part which affects the application of the FHA plan. Here we believe it is worthwhile to quote Judge Gillis in full, as reported in the *Detroit News* (Feb. 9, 1936):

"A thing that makes my blood boil is the way 'gyp' salesmen are using the name of the Government to make sales. The Government set up machinery under the National Housing Act whereby a householder could give his note to cover costs of improvements on his property.

"The only connection the Government has with the transaction is that it guarantees reimbursement for the lender losses up to 20 per cent of the total volume of his business. But some bank or other financial institution lends the money. The Government hasn't anything to do with the transaction, beyond covering a part of the losses that might result. (Losses are running about 2 per cent.)

"I have discovered from cases coming into my court that the 'gyp' salesmen have been representing to the people that the Government is selling the goods.

"I have encountered cases where salesmen have said: 'The Government is having a special on this week, and you had better buy now.'

"The salesmen also say the Government is lending the money and before long it will cancel the debts.

"That is the way these racketeers are taking advantage of the Government's action in loosening credit so that householders can make legitimate improvements, and jobs can be created for unemployed building trades workers.

"I am trying to figure out how to file charges against such salesmen. In any event, I am going to protest to Washington against the way these high-pressure 'gyp' salesmen are taking advantage of the Government's authority around Detroit.

"The dice are loaded against the buyer who deals with one of these high-pressure outfits. When he signs his name to one of their contracts, he is in for a lot of trouble, if he can't keep up the payments.

"The buyer would be far better off to deal with legitimate merchants. If they won't sell him goods, because he can't afford them, the buyer had better do without the luxury."

We are informed that the FHA credit insurance plan requires that "collections must be followed relentlessly" before the government will accept responsibility for losses incurred by the approved lending agencies. Therefore, any effort of salesmen to lead customers to believe that a purchase involving the FHA plan is being made under the benign auspices of a benevolent Uncle Sam, is nothing less than rank misrepresentation. In our opinion, any dealer who permits that sort of thing, deserves little consideration.

## Letters

### Would Like an Impartial View of U. S. Industry

Westinghouse Electric International Co.  
Westinghouse Building  
2, Norfolk St., Strand,  
London, W.C. 2

January 3, 1936.

Mr. Taubeneck:

I have heard that you may be taking a trip around the world in the interests of American exporters of refrigeration equipment, and the American refrigeration industry in general.

Presumably your itinerary will include the city of London, and I hope that when you are here you will not fail to pay us a visit, as we would like to have the opportunity of getting from you an impartial view of the industry in the United States, and at the same time it would be a pleasure to us to make available to you any information about the business here that you might need. H. R. BOSWELL,  
European Merchandising Mgr.

### Willingness to Give all Information Available

Friger, Ltd.  
Kralovska 67, Praha-Karlín  
Czechoslovakia  
(Frigidaire Distributors for Czechoslovakia  
Refrigerating and Technical Equipment)  
Cable Address: Friger Praha  
Jan. 13, 1936.

Editor:

I was very interested to learn of your proposed world tour and sincerely hope that your itinerary will include Czechoslovakia as well.

It will be a real pleasure to welcome you here and you can rely on our willingness to give you all the information available.

Looking forward to the privilege of meeting you. J. PANEK, Mgr.

### Want to Sell Dealers in the Southwest?

Harvey T. Cory Co.  
1710 Laws St., Dallas, Tex.

Editor:

The above company was organized in 1932 and since that time have represented manufacturers selling direct to the jobbing trade.

We refer you to the following accounts as references of the line which we handle now. Hatfield Wire & Cable Co., Hillside, N. J.; Eastern Tube & Tool Co., Brooklyn, N. Y.; Deal Electric Co., 338 Berry St., Brooklyn, N. Y.; Victor Electric Products, 712 Reading Rd., Cincinnati, Ohio.

The writer has just become associated with this company and due to my past experience with the following concerns, we deem it advisable to add to our lines of manufacturers, some of the larger appliance houses, Edison, General Electric, Stewart-Warner, and Kelvinator.

We are writing you with the thought in mind that you possibly know some manufacturer in the domestic trade who is not represented in the states of Texas, Arkansas, Oklahoma, and Louisiana. We would prefer making connections with the factories who are interested in selling to the dealers.

We have ample warehouse stock facilities to carry stock for the factories, travel four men, and are well acquainted with all the large retail accounts in these states.

Any information you can give us will be greatly appreciated.

BOB CHRISTIE.

### How to Keep Up the Old Fighting Spirit

Montgomery & Ward  
Joliet, Ill.

Editor:

I have read the ELECTRIC REFRIGERATION NEWS for past two years or more and consider it a very important part of my work. And look eagerly for its arrival each week.

For the last two months I have not read it and I must confess that I have been rather lost. It seems to give a salesman a little pep and keeps the old fighting spirit up.

Enclosed find cashiers check for \$3 for years subscription to the NEWS.

F. W. HUGHES.

### The News and Books Are a Bargain at Any Price

"I am only too glad to take advantage of your subscription rates, although I really think that the NEWS and Volumes 1 and 2 of the library are a bargain at any price, and have proven themselves invaluable on many occasions. The year's subscription to the NEWS I wish to follow my present subscription which ends April 2, 1936; thus making sure that I shall not miss any issues."—Henry G. Gefken, 215 Eighth St., Brooklyn, N. Y.

## Flossie



—Reprinted from the Detroit News

"Boy, These'll Be the Hardest Snowballs in the Fight Today!"

## Do Service Men Want Catalogs?

### Announcement of 'Catalog Mailing Service' Brings Many Requests from Readers

"Am enclosing money order for \$3.00 for one year subscription to ELECTRIC REFRIGERATION NEWS. I would like to have my subscription start from Jan. 1, 1936 so I would have the back issues.

"I would also like to be placed on your mailing list to receive catalogues and trade literature from manufacturers, and independent service men list."—George E. Davidson, Refrigeration Service Engineer (Service & Installation on all makes), 209 Maple Ave., Clairton, Pa.

"As a new subscriber to your ELECTRIC REFRIGERATION NEWS and SERVICE MANUAL I would appreciate it very much if you would put me on your mailing list for catalogs, etc., as I am a newcomer in the refrigeration business and same will help me to acquaint myself with the manufactured products.

"The ELECTRIC REFRIGERATION NEWS is a very good publication as I see it after receiving only three copies of it.

"I received your introduction to the MASTER SERVICE MANUAL and after reading the six chapters I think the rest of the book will be the best on the market."—Morris Friedman, 56 Powell St., Brooklyn, N. Y.

"Kindly list us as a dealer and a service company on refrigeration (domestic type) in your directory, so that we can obtain refrigeration information from concerns to whom you supply our name."—Otto Hladilek, Chicago Repair & Sales Co., successors to Geyser Electric Co. (manufacturers of washing machines) and Swanson Washing Machine Mfg. Co., wholesale & retail, 5235 S. Kedzie Ave., Chicago, Ill.

"I would like to have my name placed on your catalog mailing list you are forming. I have been a reader of the NEWS since 1927. Thank you." S. C. Mathias, 1236 Douglass St., Reading, Pa.

"Enclosed money order for \$2.20, to cover the cost of two issues of ELECTRIC REFRIGERATION NEWS plus the additional two dollars to pay for the MASTER SERVICE MANUAL in conjunction with our new subscription as of 12-23-35. Please enter our name with your list for manufacturer catalogs.

"Thanking you for your cooperation and awaiting the early receipt of service manual."—Ruben Albert, Passaic Refrigeration & Radio Co., 357 Monroe St., Passaic, N. J.

"Please place on your 'Catalogue Mailing List,' Trussell Refrigeration Co. (Repairs—Alterations—Installations—24 hour Domestic and Commercial Refrigerator Service on any equipment using any refrigerant.)—Pequannock, N. J.

"Please enter my name upon your mailing list, and oblige."—Weaver R. Wells, (Guaranteed Service in Electrical Refrigeration and Appliances), 1312 Willow St., Trinidad, Colo.

"We of the Paulson Jewelry Co., Copeland Distributors, have been readers of the ELECTRIC REFRIGERATION NEWS for a number of years and value the information given very highly.

"Would also like you to register me on the catalog mailing list, and independent service men list. Thanking you very much in advance for the interest shown by you on behalf of the service departments and independent service men of the industry."—J. L. Driskell, 236 North Almo, Burley, Idaho.

"Upon receipt of the sample copies of the REFRIGERATION NEWS a few days ago, I mailed in my subscription fee for one year, also for the MASTER SERVICE MANUAL.

"While glancing through the January 15 issue, I notice you are compiling a catalog mailing list. You may also add my name."—Harvey Green, (Licensed Electrical Contractor, Light-Heat-Power), 2242 Tiebout Ave., Bronx, New York City.

"As a subscriber to your paper, and being interested in the sale of refrigerators and parts, we would appreciate your placing our name on your catalog mailing list."—M. W. Berns, Treas., Roburn Agencies, Inc. (Buying and Shipping Agents for Export), 11 Warren St., New York, N. Y.

"I am a subscriber to the ELECTRIC REFRIGERATION NEWS, and wish you would put my name on the list for the 'Catalogue Mailing Service' for service men."—Leslie Brainard, Fresno, Calif.

### What Others Say

"I am sorry to state that I did not receive my copy of the Jan. 1 issue of ELECTRIC REFRIGERATION NEWS. I am keeping each copy on file and would not like to miss any one copy. Will you therefore mail me my copy at your earliest convenience. Being a new subscriber, I have only received a few copies to date, but what I have received, I enjoyed reading very much."—Frank J. Krauthelm, 2669 S. Second St., Steelton, Pa.

"Have received my copies of ELECTRIC REFRIGERATION NEWS and have sure enjoyed reading them. Sorry I did not subscribe long ago."—V. Lee McNew, Montgomery Ward, Monterey, Calif.

"Please change my address to McCurdy & Co., Rochester, N. Y., Electric Appliance department, and kindly see that I don't miss an issue as I would rather miss most anything else than one issue of your publication."—L. L. Frank, 501 Bell Ave., New Castle, Pa.

"Have been traveling recently and reading everybody else's ELECTRIC REFRIGERATION NEWS. I want to see what will happen to our George T. so please put me back in good standing starting Feb. 1. Many thanks—3 bucks attached."—Calvin D. Mitchell, 1712 Beverly Dr., Charlotte, N. C.

## Crosley Distributors Hold Open House and Banquets for Presenting Line to Dealers

CINCINNATI — Open-houses, banquets, new display rooms, and even dancers were used to introduce the new 1936 Crosley line at dealer and distributor pre-views during the first part of January.

Indirect lighting and modernistic draping in a new display room made an effective background for the introduction of the Crosley products for this year by the Hieb Distributing Co., Des Moines, at a three-day open house for 150 dealers, Jan. 13, 14, and 15.

The slogan "This Much More In Shelvador" was strikingly demonstrated at the Tarbell-Watters Co. meeting at the Hotel Kimball in Springfield, Mass., when Miss Delores Harlow, dancer, encoined in a 6-ft. Crosley model, emerged and gave a specialty number.

After the floor show and banquet, which was attended by 200 dealers from western Massachusetts and Vermont, Howard E. Richardson, general sales manager for Crosley, was introduced by John Leven, Tarbell-Watters sales manager.

The distributing company has a branch at Pittsfield, Mass., under the supervision of Andrew Corinet, and during the past summer, also opened a branch at Rutland, Vt., under the management of Roy Todd. A prize of a Crosley "fiver" was awarded to Fred S. Dyke, Crosley dealer of Barton, Vt., who traveled the greatest distance to attend the meeting, 234 miles.

Five hundred dealers and their salesmen were received by George Collins Co., Boston distributor, at its meeting at the Hotel Kenmore in that city Jan. 15. Mr. Richardson outlined the merchandising plans and T. Berger gave a demonstration of the new washers and ironers.

The biggest attendance and the largest sales they've ever had were reported by distributors in Illinois, Iowa, and Wisconsin, following dealer meetings there.

An open-house meeting was used by Maurer Greusel Co. in Milwaukee Jan. 15 and 16 with the result that orders from the company for January and February alone are more than 50 per cent of its entire volume of business last year.

At Peoria, Ill., the Advance Appliance Co. held a banquet and meeting for more than 100 dealers in the Grand Ball Room of the Jefferson hotel, Jan. 15. Central Auto Equipment Co. had its meeting in Springfield at the Abraham Lincoln hotel Jan. 16; and at Quincy, Ill., the Tenk Hardware Co. held an all-dealer meeting Jan. 17, the largest held in that territory since 1928.

C. S. Carey, Crosley district manager, demonstrated the 18 models of the Crosley refrigerator, the four additional models of the radio line, and three types of electric washing machines and ironers to the 270 dealers and salesmen from 60 Indiana counties who attended the banquet meeting given at the Hotel Antlers, in Indianapolis, by Kiefer-Stewart Co.

Assisting G. Moxley, president of Kiefer-Stewart, with the program were: O. C. Maurer, vice president; Howard Brewer and Al Tribbett, out-of-city representatives of the company; and Hugh Green, city salesman.

Approximately 176 dealers and salesmen from the Providence territory were present at the Providence Electric Co.'s showing. Sam Cohen, president and general manager of the company, welcomed the dealers, and Mr. Richardson outlined the sales plans for the year.

## Jones Explains Plans To 150 F-M Dealers At Milwaukee

MILWAUKEE—Charles E. Turnock, Milwaukee distributor, introduced the 1936 line of Fairbanks-Morse refrigerators to 150 dealers and their salesmen who attended the formal meeting held at the Astor hotel here recently.

Factory viewpoint and dealer policy were explained by W. Paul Jones, head of the home appliance division of Fairbanks-Morse; and Bob Andersen, divisional manager for the Milwaukee territory, explained some of the new features of the 1936 line.

W. R. Ceperly concluded the meeting by showing samples of the advertising promotion material.

## Jordan Presents Grunow Line at 5 Meetings

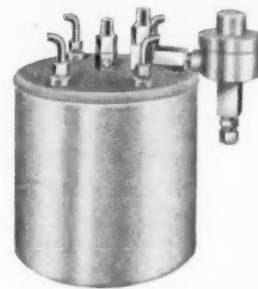
CHICAGO—At Grunow refrigerator meetings held recently in St. Louis, Indianapolis, Cincinnati, Saginaw, and Grand Rapids, dealers heard Dr. J. D. Jordan of the Grunow factory, describe the refinements in the 1936 line of Grunow refrigerators.

Members of the Brown Supply Co., St. Louis; Griffith Distributing Co., Indianapolis; Griffith Distributing Co., Cincinnati; Fisher Bros., Saginaw; and Republic Distributing Co., Grand Rapids, attended the meetings, at which H. J. Shartle, general sales manager, outlined sales plans for the coming year, and J. J. Davin, sales promotion manager, discussed the advertising program.

At the St. Louis meeting, which was the first sectional sales meeting, F. A. Wiebe, vice president and general sales manager of the Brown Supply Co., acted as chairman. Captain Brown, president, also spoke.

## THESE ARE YOUR PROSPECTS

★ The dispensers to whom you sold equipment in 1935 are those who have established themselves on a sound basis. They know their business and are aggressive in its expansion.



With the rapid increase in employment, 1936 will tax the resources of every progressive, well established outlet. Additional equipment of every type will be needed and most of all additional Beer Coolers. These outlets are your best prospects today for Temprite Units.

It is easy to prove why a Temprite delivers beer at just the right temperature regardless of weather conditions—why it is the most economical unit a dispenser can use and how it helps him attract a larger patronage.



Go after your 1935 customers and you'll make 1936 a banner year for yourself.

**TEMPRITE PRODUCTS CORPORATION**  
1349 EAST MILWAUKEE AVE. - DETROIT, MICHIGAN  
ORIGINATORS OF INSTANTANEOUS LIQUID COOLING DEVICES

## Rotogravure Sections to Announce 'Golden Jubilee' Models of Westinghouse to Public Feb. 16

DETROIT — Rotogravure sections in newspapers all over the country will be used to introduce the new Westinghouse Golden Jubilee line of refrigerators to the buying public under the slogan of a "new standard of refrigeration value." It was made known at a district meeting for more than 500 dealers held in the Hotel Statler here recently.

Breaking in 514 Sunday papers Feb. 16, the advertising campaign will continue in leading newspapers during the year, supplemented by full color pages in ten magazines, James Hugo, sales promotion manager of the central district, announced. *Saturday Evening Post*, *Colliers*, *Good Housekeeping*, *American*, *Cosmopolitan*, *McCalls*, *Ladies Home Journal*, and *Better Homes and Gardens* are among the national periodicals which will be used.

Opportunity for dealer tie-ins will be offered in the newspaper advertising, in addition to outdoor posters, technicolor one-minute movie shorts, and 15-minute radio skits that have already been prepared.

Refrigeration will also be given a prominent place in advertisements with other electrical appliances, building up the idea of an all-electric kitchen.

A sample of the radio program with music and skit recorded, ready for the commercial squib of the dealer, was enacted for the audience, and several of the colored movies shown.

"Designed to take the place of our low priced line" was the introduction that J. F. O'Donnell, central merchandise manager, gave to the Golden Jubilee models. This policy is in keeping with the resolution previously announced by R. C. Cosgrove, national manager of household refrigeration, to direct selling toward the market for medium and low priced models, or approximately 8,000,000 new prospects.

Mr. O'Donnell demonstrated 1936 features by one of the Golden Jubilee models, the ED 70: the hermetically sealed unit in the bottom, which is a departure from last year's model, the chrome and black enamel hardware, the feather-touch door latch, adjustable shelf for bulky food, three food-saver dishes, sliding shelf, one-gallon water container with handy faucet, triple-service ice-cube trays with a fast-freezing top, and ejector-cube tray with flexible grid.

An elaborate stage setting, which involved four tons of equipment, was used for the display meeting, the last in this district. Four other outfits now on the road will continue to give demonstrations at district meetings until Feb. 15.

At the completion of the showing of all the models, including the five standard Golden Jubilee models, the five deluxe Golden Jubilee models, three special models, and two economy models, a curtain was pulled to show a gold cabinet from which a flood of coin-like discs bearing the Westinghouse slogan symbolized the dealer profits to come from the new line.

"The New Frontier—An Epoch of Electrified America," a movie illus-

trating Westinghouse electrical contributions during the 50 years since its establishment in 1886, was shown to the dealers to open the after-dinner meeting.

Frontiers of light, power and industry, transportation, and communication, dramatically presented, were followed by the home frontier, showing the possibilities of an all-electric kitchen, and finally, the frontier of tomorrow. Air conditioning was included among "tomorrow's frontiers."

Another movie, "A Visit To Value Town," showed by animated drawings the foodstuff's point of view.

The meeting was concluded with a wind-up by W. E. Howlett, refrigeration manager, Detroit, who announced Monday, Feb. 17, as "contact day," and the beginning of Announcement week, when the new Westinghouse line will be shown on dealer floors.

## Distributor Sends Summons To Dealers for Open House

BUFFALO—New method of getting complete attendance at distributor-dealer meetings is one which the Ontario Electric Corp., Crosley distributor here, used recently in connection with its open house meeting at which the 1936 refrigerator line was shown.

Each dealer received a series of four cartoon cards calling his attention to the meeting. Fifth and final piece in the direct mail campaign was a summons in which the "Crosley Court of Appeals in the name of the Ontario Electric Corp.," commanded the dealer's presence.

## 3 Kitchens Are Featured at Moore-Handley Meeting

BIRMINGHAM, Ala.—Three kitchens, symbolizing the past, present, and future, were exhibited at a tri-state meeting sponsored here recently by Westinghouse Electric & Mfg. Co. and Moore-Handley Hardware Co., local distributor, to introduce new ranges and refrigerators.

The displays showed the old kitchen with its coal- or wood-burning stove and ancient ice-box; the kitchen of today, not yet completely modernized; and tomorrow's kitchen in which all the scientific devices were utilized.

J. S. Shaw of Moore-Handley presided over the meeting, and W. B. Creech spoke for Westinghouse.

## Atkinson Made President Of Brooklyn Dealers

BROOKLYN—New officers of the Electrical Appliance Dealers Association of Brooklyn, Inc., recently elected are: Russell A. Atkinson, president; James J. Schnee, first vice president; Sam LeWinter, second vice president; A. H. Grafenstadt, treasurer; Albert H. Bernhard, secretary; and Sam Klein, sergeant-at-arms.

## A salute to a young giant . . .



# Air-Conditioning

WE ARE PROUD OF OUR CONNECTION WITH THIS PROSPERITY-MAKING INDUSTRY—PROUD,

TOO, OF THE CONTRIBUTION OF "FREON" TO ITS SUCCESS—THE ALL-IMPORTANT FACTOR OF SAFETY.

IN 1936, we are increasing our efforts to bring the story of safe, efficient, profit-making air conditioning to thousands of your most important prospects. We invite you to make use of our advertising in your selling efforts, and to call on us for any help our experts can give.

"Freon" is the refrigerant used in over 99% of all mechanically cooled railroad systems, in schools, hospitals, factories, submarines—wherever human safety demands maximum protection. It meets all the requirements set by the Underwriters' Laboratories of Chicago in their recent report "Standard for Commercial Refrigerating Systems" (Subject No. 207).

"Freon" is non-toxic, non-flammable, non-explosive, and odorless when mixed with air up to 20% by

volume. It has no ill effects on furs, flowers, candy or foods.

Over seven thousand tons of "Freon" refrigeration are contained in government buildings in Washington, and it is anticipated that before the year is out an additional three thousand tons will be added. This is indicative of Federal architects' opinion of "Freon."

**SPECIFY FREON FOR SAFE, EFFICIENT AIR-COOLING**

Some of the important groups who will be reached by "Freon's" promotional air-conditioning advertising in 1936

Architects  
Builders  
Building Managers  
Chain Store Executives  
Contractors  
Department Store Executives  
Engineers  
Hotel Managers  
Restaurant Managers  
Retailers

And many allied groups, representing the cream of your 1936 prospects.



# FREON

REG. U. S. PAT. OFF.

*a group of safe refrigerants*

KINETIC CHEMICALS, INC., TENTH & MARKET STREETS, WILMINGTON, DELAWARE

## Carrison Gets York Franchise in South

JACKSONVILLE, Fla. — Carrison Engineering & Sales Co., Inc., has been appointed distributor in this territory for York mechanical cooling and air-conditioning systems.

The Carrison Co. has offices at 307 West Duval St., and its sales territory will include north Florida and south Georgia.

D. J. Carrison, president of the company, has had more than 20 years' experience in sales engineering work in connection with Diesel engines, both marine and stationary, and has studied air conditioning since its inception in this country.

J. Wayne Moore, Jr., who is associated with the firm as vice president and chief engineer, was graduated from Georgia Tech in 1928, and has during the past several years studied air conditioning in the plant and offices of the York Ice Machinery Corp.

Sales promotion work and advertising of the Carrison Co. will be handled by Miss Mary S. Brightman, who for five years was in charge of personnel at the Tubize Chatillon Corp. of Rome, Ga.

**LARKIN COILS**  
Always LEAD  
• SERVICE  
• FEATURES  
• PRICE

## Westinghouse Sets Up New District Office In Birmingham

BIRMINGHAM, Ala. — Westinghouse Electric & Mfg. Co. has chosen Birmingham headquarters for what will be known as the South-Central District, including Alabama, Tennessee, Mississippi, Louisiana, and north Florida, with offices in the Comer building here. Harold W. Brown has been named district manager.

Formation of the new district, Mr. Brown said, has necessitated transfer of several employees from Atlanta, under which Birmingham heretofore has operated, and Mansfield, Ohio, home office.

## Refrigerators, Ranges to Be Featured in Broadcasts

MIDDLETOWN, Ohio — Broadcasts featuring electric refrigerators, kitchen ranges, and washing machines will constitute a series of talks by Bennett Chapple, vice president of the American Rolling Mill Co., over the NBC Armo band concert program in February and March.

The dates for the broadcasts, which are designed to emphasize the importance of new porcelain enameled electrical appliances in the home, are: Feb. 12, kitchen ranges; Feb. 26, refrigerators; and March 4, washing machines.

## New Stewart-Warner Dealers Appointed

CHICAGO—Domestic Utilities, Inc., here has just appointed the following dealers to handle Stewart-Warner refrigerators:

B. Michelson's, Inc., 9016 Commercial Ave., Chicago; B. Michelson's, Inc., 555 State St., Hammond, Ind.; A. Schlesinger, 3136 Lincoln Ave., Chicago; Peyla Furniture Co., 630 Cass St., Joliet, Ill.; Peterson Electric Co., 1015 Broadway, Rockford, Ill.; Peoria Tent & Awning Co., 611 Franklin St., Peoria, Ind.; Barclay Hardware Co., 17 East Chicago St., Elgin, Ill.; South Side Radio Sales & Service, 145 East 51st St., Chicago.

Grand Hardware & Paint Store, 7209 West Grand Ave., Elmwood Park, Ill.; Sig. Dubin, 5212 West Chicago Ave., Chicago; B. Michelson's, Inc., 4239 Indiana Ave., Chicago; Lake County Washer Service, 506 10th St., Waukegan, Ill.; Fleming Radio, Gary, Ind.; Empire Furniture Co., 1400 Broadway, Gary, Ind.; 314 Tire & Battery Service, 529 Second St., LaSalle, Ill.; Luchman Auto Supply, 1019 East Michigan St., Michigan City, Ind.; and Goodman Furniture Co., 6821 South Halsted St., Chicago.

## Willis to Buy Appliances For Baltimore Store

BALTIMORE—Richard H. Willis has been appointed manager and buyer of electrical appliances for O'Neill & Co., department store here.

## Failure of Retail Salesmen to Sell Quality & to Demonstrate 'Companion' Products Criticized by Store Training Director

NEW YORK CITY—Selling price, rather than quality, and a failure to employ the principles of suggested or "companion" selling—these are the two most glaring weaknesses in retail salesmanship today, Florence L. Luman, training director of Stern Brothers, New York City, told a general store management session of the National Retail Dry Goods Association at the organization's twenty-fifth annual convention here recently.

"Our salespeople are still price conscious," Miss Luman said. "They lack the courage to show the next higher priced merchandise and to justify that price."

"Too many of them think in terms of their own income and the incomes of their friends, and fail to recognize that, even though the customer in the higher income group has experienced financial loss, she is still in a position to buy our better merchandise. She prefers quality, perhaps, to quantity. We are ailing with price inertia."

### What Customer Expects

In discussing common weaknesses in selling, the speaker said, there are two sides of the counter to consider: first, of course, is the customer's side. "What does she expect of us in the way of satisfactory contacts? What is there about us that will make her want to come back again and again? Or what cause do we give her to say over the tea cup, 'I just don't like that store—something about the salespeople I can't quite take to.'"

Miss Luman took her audience on a mythical shopping tour of a department store, pointing out the negative selling tactics which characterized many of the salesmen. One particularly illuminating incident took place in the mattress department—here, the differences between good and poor salesmanship are clearly shown. As Miss Luman told it:

### Mythical Tour Illustration

"We decide that as long as we're in the store we may as well look for that mattress we've needed for the guest room. We don't know very much about mattresses; so, like most customers, we agree that if we shop in a reliable store, spend an average price, and are fortunate enough to get a competent salesman, we should find the right mattress for our needs."

"From magazines and outdoor advertising we are familiar with Simmons 'Deep-Sleep' and 'Beautyrest.' So we ask the salesman who approaches us if he carries these—not that we know the difference. He calls our question out to a second salesman, who informs us that the store carries one but not the other."

"Our own salesman leads us back to the mattress section. He examines tickets, mumbling something about, 'where could those be?' We ask the difference between the 'Deep Sleep' and the 'Beautyrest' and he tells us: 'Not much, except that the one this store handles is the superior. That's why this firm prefers it.'"

### Mattress Presentation

"We walk from one mattress to another and he reads the tags. 'This one is cotton felt with inner spring, this one is covered with Belgium linen, this one is hair filled—also inner spring.' To complicate matters he shows us parts of mattresses all cut up, and informs us: 'This is hair; this is cotton; this is sisal; these are springs.'"

"There is one mattress that we favor more than the others; perhaps it is the covering; it may be its springy softness, or our preference might even be influenced by the price. At any rate, that mattress stands out, but not knowing mattresses we hesitate for fear of making a mistake."

### Another Presentation

"Another salesman and customer stop to examine the mattress. 'This,' advises the second salesman to his customer, while we listen, 'is our own make. The filling is the finest, cleanest, grade of hair to be had. There are 408 pocketed, tempered coil units. That other mattress has only 220 coils and they are not individually pocketed. The additional coils mean that weight is more evenly distributed, that the strain on each spring is lessened, a fact which prevents hills and valleys from occurring for many years. Then too, the best quality of white, China cotton felt and lamb's wool are used to give greater softness.'"

"As an additional feature, this mattress has an imperial edge—something no nationally advertised mattress offers at this price. The imperial edge," he explains, "keeps the sides firm and secure. As long as the mattress wears, the edges will not sag and you can always be certain that after sitting on your bed your mattress will spring back to its natural shape." That is all we need to know. We come from a 'bed sitting' family. This is our mattress."

The cure for this condition, said the speaker, lies in a closer supervision

of the type of persons employed as salespeople, and a more thorough and consistent training in the principles of proper salesmanship.

"Our old friend, suggestion selling, ensemble selling, companion selling, multiple selling—training departments have disguised it under any number of names, but the fact remains that, call it what you will, salespeople generally do not show that additional item—either related, new, advertised or unrelated," Miss Luman said.

### Analysis of Complaints

"How weak are we in the points brought out? An analysis of customer complaints, service shoppings, credits and exchanges, observation on the floor, the remarks of other executives of the store, their wives, husbands, and friends, would largely answer the question."

"Are we doing anything to correct these weaknesses? The answer is obvious. We are exercising greater care in the selection of our people. We needn't employ the person with a dull, uninteresting expression. We can, to a certain extent, guard against hiring the unintelligent, the untidy. The rude, unmannerly person is likely to give himself away to the watchful interviewer in his very first contact."

"The proper training, I am certain, is being given where managerial attitudes and conditions permit. We are teaching our people the business value of good manners; we are getting closer to the selling floor and doing more instruction in the location and care of stock; emphasis is being placed on what the merchandise will do for the customer rather than merely on what it is."

### Observe Weaknesses

"If we will go down to our selling floors for the sole purpose of observing, recognizing, and admitting our weaknesses, then the cure is well begun."

"Of immense value in the correction of weaknesses is exacting and constant supervision and direction. The job is not one for the teacher alone."

"It requires that every executive in the store be familiar with defined standards, that he practice these standards, and that he hold his people to them. Only coordinated effort will bring us close to the ideal."

"Service shopping, I believe, offers one of the best bases for revising training programs and for measuring their effectiveness. It gives us an opportunity to praise and say 'well done!' It furnishes facts for constructive interviews. It affords a goal, the achievement of which by the salesperson may be compensated by a financial reward or a public citation."

## Electrolux Sales Increase 56% during 1935

NEW YORK CITY—Unit sales of Electrolux refrigerators for 1935 increased 56 per cent over the preceding year, F. E. Sellman, vice president in charge of distribution of Servel, Inc., reports.

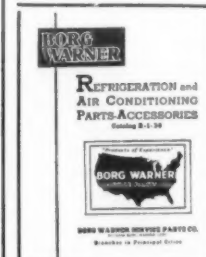
Factory shipments of Electrolux during the period from Nov. 1 to Dec. 15 exceeded those for the three months of November, December, and January of 1934, Mr. Sellman said.

## A NEW DEAL . . .

that works . . . To your advantage in the purchase of

PARTS and ACCESSORIES for all makes of REFRIGERATION and AIR CONDITIONING UNITS.

Complete Warehouse Stocks at your disposal—Every part and accessory fully guaranteed. Orders filled and deliveries made promptly and accurately.



NOW Send for Your FREE Copy of Our NEW 115-Page CATALOG

Use this catalog to save time and money—to assure yourself of quality products—and to order from a reliable source of supply that is always at your service and eager to cooperate.



Division Borg-Warner Corp. 2100 Indiana Ave., CHICAGO, ILL.

# VIRGINIA Refrigerants

available with speedy service from

## DISTRIBUTION POINTS in North America

Atlanta, Ga., J. M. Tull Metal & Supply Co.; Security Whse. Co. Baltimore, Md., Clendenin Bros., Inc. Billings, Mont., Midland Implement Co. Birmingham, Ala., Harris Transfer & Whse. Co. Boston, Mass., Virginia Smelting Co. Brooklyn, N. Y., Perry Metal Products Co., Inc. Buffalo, N. Y., Rolls Chemical Co. Burlington, Vt., G. S. Blodgett Co. Cedar Rapids, Iowa, Colders Transfer & Storage Co. Charlotte, N. C., Henry V. Dick & Co. Chicago, Ill., Innis, Speiden & Co. Cincinnati, Ohio, Williams & Co., Inc. Cleveland, Ohio, Innis, Speiden & Co. Corpus Christi, Texas, Electric Sales Co. Dallas, Texas, Beckett Elec. Co., Inc.; Dallas Transfer & Terminal Whse. Co. Davenport, Iowa, Ewart & Richter Express & Storage Co. Denver, Colo., The Auto Equipment Co. Des Moines, Iowa, Merchants Transfer & Storage Co. Detroit, Mich., W. C. Dever; Central Detroit Whse. Co. El Paso, Texas, H. J. Baron Co., Mills Bldg. Fort Worth, Texas, Baker Ice Machine Co. Fort Wayne, Ind., H. J. Schroeder Co. Great Falls, Mont., Midland Implement Co. Houston, Texas, W. B. Arbuckle; Universal Terminal Whse. Co. Indianapolis, Ind., F. H. Langenkamp Co. Jacksonville, Fla., Mead Whse. & Distributing Co. Jersey City, N. J., M. & M. Hauling Co. Kansas City, Mo., G. S. Robins & Co.; W. E. Murray Transfer & Storage Co. Los Angeles, Calif., Van D. Clothier Louisville, Ky., Harbison & Gathright, Inc. Miami, Fla., Electrical Equip. Co.; The C. A. Burnett Whse. & Transfer Co. Memphis, Tenn., United Refrigerator Service

Milwaukee, Wis., Globe Refrigerator Co. Nashville, Tenn., Middle Tennessee Electric Co. Newark, N. J., T. W. Binder New Haven, Conn., Smedley Co. New Orleans, La., Bartlett Chemicals, Inc. New York, N. Y., Virginia Smelting Co.; National Air Conditioning Co.; Lehigh Harlem River Terminal Whse. Oklahoma City, Okla., G. S. Robins & Co.; O.K. Trans. & Storage Co. Omaha, Neb., Gordon Storage Warehouses, Inc. Peoria, Ill., Isaac Walker Hdw. Co. Philadelphia, Pa., M. & E. Refrigeration Accessories Co.; Merchants Warehouse Co. Pittsburgh, Pa., Wm. M. Orr Co.; Kirby Transfer & Storage Co. Portland, Me., Galt Block Whse. Co. Portland, Ore., C. F. Miller & Co. Roanoke, Va., Thurman & Boone Co. Rochester, N. Y., Rolls Chemical Co.; c/o Upton Cold Storage Co. Salt Lake City, Utah, Denver Fire Clay Co. San Antonio, Texas, Alamo Refrigeration Co. San Francisco, Calif., Refrigerating & Power Specialties Co. Seattle, Wash., C. F. Miller & Co. Spokane, Wash., C. F. Miller & Co. Springfield, Mass., Boston & Springfield Despatch Co. St. Louis, Mo., G. S. Robins & Co. St. Paul, Minn., Midwest Chemical Co. Syracuse, N. Y., Rolls Chemical Co.; Great Northern Warehouse Tampa, Fla., Thurrow Radio Distributors; Lee Ter. & Whse. Corp. Toledo, Ohio, Heat & Power Engineering Co. Tulsa, Okla., Nichols Transfer & Storage Co. Tyler, Texas, Walter Connolly West Norfolk, Va., Virginia Smelting Co. White Plains, N. Y., County Seat Plumbing & Supply Co. Montreal, Quebec, Canada, Bruce Ross, Ltd., c/o Pigment & Chemical Co., Ltd. Toronto, Ontario, Canada, Bruce Ross, Ltd. Vancouver, B. C., Can., Shanahan Chemicals, Ltd. Winnipeg, Manitoba, Can., Seaver Soap & Chemical, Ltd.

MANY conveniently-located distribution points make these perfected refrigerants quickly and easily available.



Every trace of moisture removed by our exclusive patented process—every step in production checked by rigid laboratory control, assuring unvarying purity; saving time, labor and money for the Service Man.



Gives sub-zero temperatures at above-atmospheric pressures— which of course means that any mechanical equipment will do more freezing when charged with V-METH-L than with a refrigerant of higher boiling-point.

Our Advisory Department gladly cooperates, without charge in the solution of refrigeration problems.

For helpful literature, mail the coupon.

**Virginia Smelting Co.**  
West Norfolk Virginia

Mail this coupon NOW!

F. A. Eustis, Sec'y, Virginia Smelting Co., 131 State St., Boston, and 76 Beaver St., New York. ERN-11-13-35  
Send me the literature I have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time.  
☐ Folder: Extra Dry ESOTOOL (Liquid Sulphur Dioxide)  
☐ Folder: V-Meth-L (Virginia Methyl Chloride)  
☐ Folder: Transferring from large to small cylinders  
☐ Circular: Physical properties of various refrigerants

Name .....  
Street & No. ....  
City & State .....

# Air Conditioning

## Windowless Glass Research Laboratory to Be Completely Air Conditioned

TOLEDO—Air conditioning will be given a new test in the world's first all-glass windowless structure, the Owen-Illinois Glass Co.'s two-story glass block research laboratory here, which has just been completed.

Because of the absence of windows in this large 39-room laboratory, ordinary infiltration of air and dust has been entirely eliminated as a source of partial ventilation. Thus, being virtually an air-tight structure, the air-conditioning installation had to be designed of sufficient capacity to handle completely the requirements of persons within the building.

Under maximum conditions, the equipment has to handle 26,000 c.f.m. of air, 12,000 of which is fresh air and 14,000 recirculated air. This requires 175 g.p.m. of cooling water at a temperature of 53° F. This water is obtained from wells driven adjacent to the building.

### Sensible Cooling Load

Sensible cooling load on the conditioned space in the two-story building, with 20,000 sq. ft. of floor space, will be about 509,000 B.t.u.'s per hour. Elements that produce the total volume of heat that must be cooled to satisfactory temperature consist of transmission heat gain, sun effect gain (unusually low because of glass block resistance to solar heat penetration), gain due to operation of motors, and heat liberated by blue print machines of the research department. Added to this is a factor to take care of 140 occupants of the building.

To maintain a temperature of 70° F. inside the laboratory when it is -10° F. outside, it is estimated the heat loss will be 791,500 B.t.u.'s per hour. If the air-conditioning equipment is handling 12,000 c.f.m. of fresh air, it is estimated the steam requirements of the heating coils and of the heater for the spray humidifier will be approximately 2,000 lbs. of steam per hour.

If, however, only 5,000 c.f.m. of outside air is admitted for ventilation to compensate for that exhausted under such periods of operation, the steam requirements will drop to about 1,400 lbs. per hour.

### Central System Employed

A central-station unit is employed, and the air-distributing system exclusive of the five private offices is divided into seven zones in which the temperature conditions are controlled during both summer and winter, varying the volume of conditioned air admitted in accordance with the requirements.

For the five private offices a separate supply fan is provided, which, under winter operation, will take a mixture of heated conditioned air at a point ahead of the main supply fan and mix with that air a quantity of filtered outside air to maintain automatically a duct delivery temperature of 68 to 70° F.

Room thermostats located in each of the private offices operate steam valves located in the steam supply to booster heaters in each branch to provide temperature in each office in accordance with the requirements of the occupant. During summer operation the fan will take cool, conditioned air only, and the room thermostat will control the volume of air admitted through suitable volume dampers.

For winter heating a differential system of control, in which the air delivery temperature will be varied in accordance with the outside temperature existing at any one time, will be used. Also incorporated is a static pressure regulator in the system, which varies the volume of conditioned air handled in accordance with the aggregate demand of the various condition zones.

These controls, together with insulating properties of the glass block partitions, make possible summer temperature in one room and cool temperature in the adjoining room, should such a contrast be desired.

### Capacity of System

The complete air-conditioning system has a capacity sufficient to maintain a condition of 83° F. dry bulb and 50 per cent relative humidity during periods of summer operation when the outside temperature does not exceed 95° F. dry bulb and 78° F. wet bulb.

Grilles installed at floor level in the glass block partitions enable the return flow of air to the conditioning unit without creating drafts either in the rooms or corridors. En route to the conditioning system this air is cleaned of all dust and other foreign matter by passing through filters made of fibrous glass.

Acting as further insulation, and as a sound deadener, fluffy, cotton-like fibrous glass lines the ceilings.

### Five Separate Laboratories

The new building, housing the company's vast packing research division, will contain five separate laboratories, a large library of valuable references, and the company's collection of glass containers dating back through the years. A flow of soft, diffused daylight will be transmitted through all of the building, encased as it is with translucent glass blocks.

Equipment used in the installation includes a Clarage Unicool conditioning unit, having a capacity of 26,000 c.f.m., comprised of a dozen 30x72-in. two-row coils, arranged three high and four deep, and complete with eliminator, humidifying spray, nozzles, and casing.

### Two Fans Are Used

Two fans are also used, the larger one with a capacity of 26,000 c.f.m. and the smaller furnishing 1,300 c.f.m. to the five private offices. Driving the first fan is a 10-hp. motor, while a motor of 1/2-hp. size drives the smaller one. Both fans are equipped with sound isolation bases.

Five Aerofin booster heater sections are located in the branch ducts to each of the five private offices. Two Clarage ready units handle the toilet exhaust system, and are driven by 1/4-hp. motors.

The complete system of pneumatic temperature and humidity control for the building has been worked out by Johnson Service Co. Seven summer-winter room thermostats, each operating on an automatic volume damper, control the volume of air admitted to the seven zones, exclusive of the five private offices; five others, located in each of the private offices, operate five diaphragm steam valves located in the steam supply to the booster heater supplying that zone.

### Operates Five Dampers

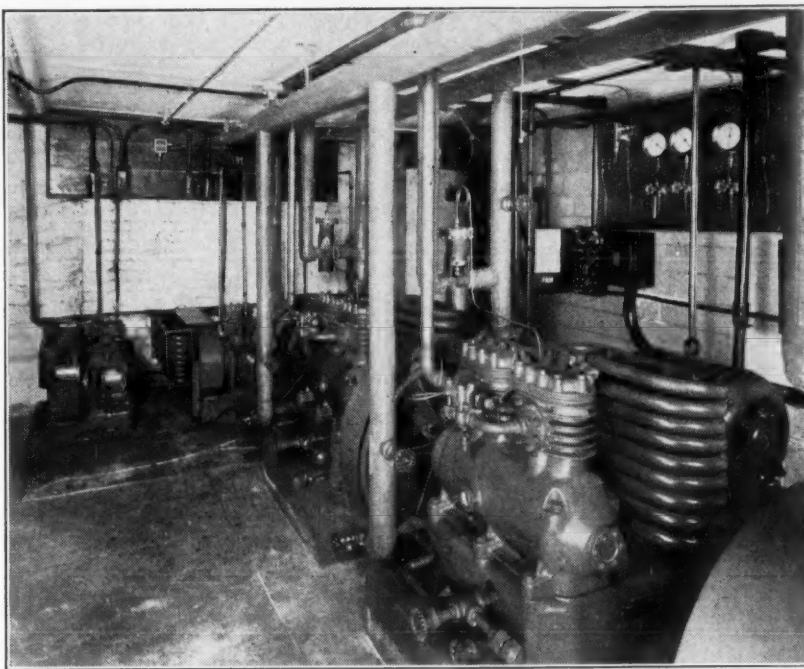
During summer operation, these last thermostats will operate five volume dampers controlling the volume of conditioned air admitted. The thermostats will be automatically changed from summer to winter control position by varying the main-line air pressure to them from a centrally located master control switch.

Three duct thermostats are used, one in the discharge of the private office supply fan; another, of two-point reversing type, in the entrance to the Unicool unit; and the third in the return air duct. The first of these thermostats regulates the volume of outside air taken in by the fan; the second operates fresh and return air dampers, taking in outside air when it can be used for cooling, and eliminating the necessity for using cold water at such time; and the third controls water admitted to the humidifying spray.

A remote adjustable thermostat with two bulbs, one located in the discharge duct from the fan, and the other in the outside air duct, operates two 3-in. diaphragm steam valves automatically varying delivery air temperature and thereby the heating effect provided by the heating coils as determined and required by the outside temperature.

During winter operation, for each 2° rise or fall outside, the delivery temperature will be reset 1° F. accord-

## Furnish Cooling for Restaurant



Air-conditioning installation in the Caruso restaurant at 224 West 34th St., New York City, using three Lipman Model 1007 Freon units. Similar equipment is used in three other restaurants in the Caruso chain.

ing to the following schedule:

Outside Temp.	-10	10	30	50	70
Delivery Temp.	110	100	90	80	70

A static regulator operates the automatic Vortex control in the fan inlet which, as duct dampers close, reduces volume of air handled by the system, reducing cooling and heating requirements as well as horsepower required by supply fan. During summer operation, regulator controls operation of a 3-in. cold-water valve, regulating cold water supplied to cooling coils.

## Frank Elected President Of Fan Manufacturers

CHICAGO—John M. Frank, Ilg Electric Ventilating Co., Chicago, was elected president of the National Association of Fan Manufacturers, at the annual convention held recently.

Other officers elected were: Fred Herlan, B. F. Sturtevant Co., vice president, and L. C. Monroe, secretary.

## Credit Where It's Due

The complete tabulation of air-conditioning installations in Chicago through 1935, published in the Jan. 29 issue of ELECTRIC REFRIGERATION NEWS, was furnished through the cooperation of Commonwealth Edison Co., Chicago utility.

Compilation of the statistics was made under the supervision of Knight C. Porter, head of Commonwealth Edison's air-conditioning division.

An aggressive promoter of air-conditioning equipment sales through dealers and distributors in Chicago and vicinity, the utility's figures on air-conditioning installations are conceded to be the most complete gathered by any such agency in the United States.

## Pump Makers to Study Air Conditioning Possibilities

CLEVELAND—Well water cooling for homes will be studied by a committee appointed by F. J. Gould, president of the National Association of Domestic and Farm Pumping Equipment and Allied Products Manufacturers at a meeting of the association to be held here.

The committee will prepare data for figuring requirements on cooling projects and for selecting the proper equipment.

Stimulation given to electric water systems through the campaign carried on during the past year by the Electric Water Systems Council was one of the developments which gave impetus to the promotion and sale of water supply equipment.

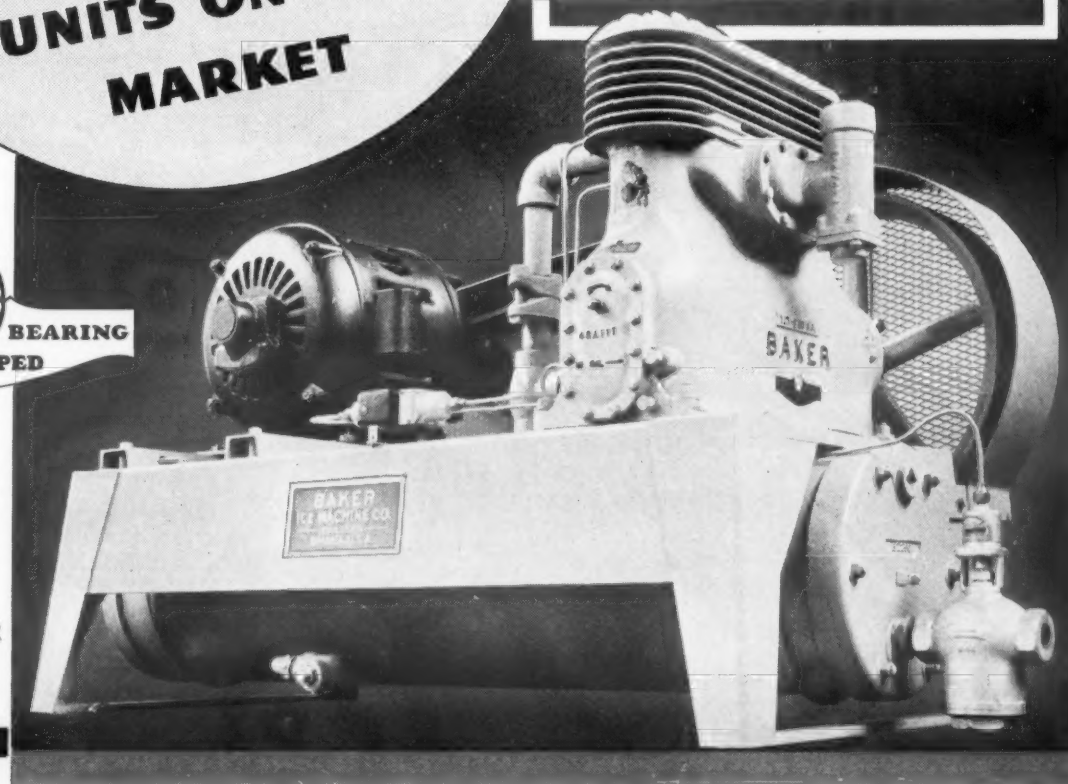
Committee members are Neil D. Skinner, Crane Co., chairman; George B. Emeny, The Deming Co.; Frank B. Perkins, A. Y. McDonald Mfg. Co.; Harold Warden, A. D. Cook Co.; and A. C. Zimmerman, The Duro Co.

**BAKER**  
PRESENTS THE  
*most complete line*  
**OF SMALL AND  
MEDIUM CAPACITY  
UNITS ON THE  
MARKET**

**77 MODELS**  
FOR FREON OR  
METHYL-CHLORIDE  
**FROM 1/4 to 30 H.P.**

**TIMKEN BEARING  
EQUIPPED**

**AIR & WATER  
COOLED  
MODELS**



for all refrigerating and air conditioning applications

● Look through the Baker line of small and medium capacity units to fill your specifications for high capacity cooling service. It's complete from sturdy midget size two cylinder type 1/4 H.P. to compact four cylinder 30 H.P. dual unit—for every variation in refrigerating requirements a Baker unit designed to exactly fit the application. In addition to being the most complete line, it also offers mechanical refinements found in no other unit—features of precision manufacture that result in an enviable record for efficiency, dependability, and low operating cost. Write for interesting new folder fully describing the Baker line—sent promptly on request.

**BAKER**  
ICE MACHINE CO., INC.

Factories: Los Angeles, Seattle, Ft. Worth, Omaha.  
Central Sales: Chicago. Eastern Sales: New York.  
Other sales and service offices in principal cities.



This emblem identifies the manufacturer who is best prepared to give you prompt, reliable factory cooperation on all air conditioning jobs.

## BARE AND COMPLETE COMPRESSORS

### Write For NEW CATALOG

Should be in the files of every assembler and service company.

Lists, describes 1/6 to 15 H.P. bare and complete commercial compressors and full line domestic, water cooling and special compressors.

10TH SUCCESSFUL YEAR



**MERCHANT & EVANS CO.**  
MANUFACTURERS  
PHILADELPHIA  
EST. 1866—Plant: LANCASTER, PA.

## Service Methods

### Kerotest Engineer Explains Use Of Liquid Indicators

By H. H. Lamar, Engineer, Refrigeration Valve Division, Kerotest Mfg. Co.

Of all the problems with which the refrigeration service engineer is confronted, shortage or excess of refrigerant or oil, and low condenser capacity are probably the most vexing. On many of the newer installations this condition may not be so troublesome because sufficient service data is available to the service engineer to help him rectify some of the conditions; but on many older or "orphan" installations the information needed to properly charge these units cannot readily be obtained.

Therefore the service engineer often uses his own judgment and the result invariably is an over-charged or under-charged machine.

Since the symptoms of an over-charged machine show up as high head pressure, the same symptoms hold true for presence of air in the system, low condenser capacity, or over-charge of oil. The service engineer is at a loss to know just what to do. He may purge air or release gas out of the condenser, thereby rectifying one condition, but leaving the machine short of refrigerant.

These shortages cannot quickly be detected by the service engineer unless they are carried to extremes. If the high pressure persists he may add additional ventilation or remove some of the oil, which may seem to give satisfactory results, but at a cost of sacrificing the efficiency of the unit due to shortage of refrigerant and increasing the danger of a breakdown due to a shortage of oil.

This apparent hopeless condition can be overcome by the use of a Kerotest liquid indicator. The application and use of these liquid indicators is so simple and the results so accurate, that any service engineer should be able to diagnose almost instantly the previously invisible ailments of their machines. The following paragraphs will give a more detailed description of the different applications of the liquid indicator.

The purpose of the indicator is to provide a visible means of determining when a positive liquid seal is obtained between the refrigerant throttle valve and the receiver, while adding refrigerant. It indicates a shortage of refrigerant which in some cases may be so slight that the effect upon the throttle valve and operating pressure would not reveal a shortage.

#### Install in Liquid Line

On a single unit system such as a domestic refrigerator, the indicator should be installed in the liquid line immediately beyond the receiver. After getting the system into normal operation any shortage of refrigerant may be detected by bubbles appearing or flowing under the glass bull's eye, these bubbles revealing that some evaporation is taking place in the liquid line; or that due to insufficient refrigerant in the system, a quantity of uncondensed gas is being supplied with the liquid.

In this case refrigerant should be added to the low side of the system until the bubbling stops. This will indicate that liquid is passing to the refrigerant control valve, and that a positive seal is provided between the control valve and the liquid receiver.

In certain cases, in extremely hot weather, high temperature conditions might prevail, even though sufficient refrigerant has been added to the system, and some bubbling may be present. This condition will suggest that the condensing capacity of the system is insufficient for the heavy load put on the system and steps should be taken to increase the condenser capacity to a point where the bubbling in the liquid indicator ceases.

An over-charge of oil may be detected by a continuous dark discoloring of the liquid and high head pressure. Normally the liquid is fairly clear with only slight traces of oil, but an excess amount of oil will tend to discolor the liquid to a noticeable degree.

This oil has a tendency to collect on the condenser tubes, thus tending to

act as an insulator, and thereby retarding the cooling action of the condenser with its consequent high head pressure.

After some of the oil has been removed, the flushing action of the refrigerant will tend to clean the condenser tubes and automatically put the system back into normal operation.

#### Essential in Multiple Installations

On multiple apartment installations where the refrigerant lines are run several floors high, liquid indicators are indispensable. Due to the long horizontal and vertical runs, in many cases as high as eight floors, it is often found that the top floor evaporators do not operate as well as those on the lower floors; but by observing through a liquid indicator the difference between the liquid at this point and the liquid as it passes under the indicator glass at the condensing unit, it will be found that the liquid is evaporating in the lines on the higher floors.

Steps may be taken to increase the head pressure to a point where the bubbling ceases in the liquid lines on the higher floors. When such a condition is found and corrected, a check valve installed in the liquid line near the receiver, and one G-W control (the name we give the Kerotest check valve) on each floor, will prevent the liquid from the higher floors from draining back into the evaporators of the lower levels and into the liquid receiver during the "off" cycle of the compressor, making it unnecessary for the compressor to pump the liquid back up to the higher floors at the start of the "on" cycle and thereby decrease the load and increase the efficiency of the system.

### New Supply Jobber in Milwaukee Opens

MILWAUKEE, Wis.—Refrigeration Specialty Co., parts jobber, opened its new wholesale refrigeration supply house at 955 N. 26th St. here with an open house for refrigeration service men and manufacturers' distributors.

The Refrigeration Specialty Co. is the distributor for Peerless coils and expansion valves. Various lines of replacements parts, coils, controls, etc., are also carried.

L. F. La Due, formerly connected with the Real Refrigeration Service Co., is manager of the new establishment.

### Summerill Making Steel Refrigeration Tubing

BRIDGEPORT, Pa.—Summerill Tubing Co. of this city is now producing seamless steel tubing for service lines in commercial and industrial refrigeration, and air-conditioning units, officials of the company have announced.

Summerill officials claim that their new steel tubing has a ductility approaching that of copper so that it can be bent and thrashed for standard SAE fittings by refrigeration service men working with hand tools.

The tubing is furnished in OD sizes, the same as copper, and eliminates the necessity of reverting to pipe sizes and threaded pipe fittings when ammonia is to be used as a refrigerant.

In the manufacture of tubing for this application, say Summerill officials, a special low-carbon analysis is selected, both for its properties of ductility and resistance to corrosion. The claim is made that special processes used in manufacture make the tubing free from any oxide or scale.

### Gear-drive Motors Are Developed by Wagner

ST. LOUIS—To meet requirements for power delivered at any desired speed, Wagner Electric Corp. has developed fractional-horsepower gear-motors suitable for direct connection to stokers, agitators, conveyors, low-speed pumps, mixers, or any application requiring special speeds.

The gear-motors are available in single- and double-reduction types, with right-angle shaft drive, and in single-, double-, and triple-reduction types with parallel shaft drive. They are available for delivering power at speeds as low as 6 r.p.m.

The single-reduction right-angle-drive motor, with an output speed of 30 r.p.m., is driven by a Wagner ¼-hp., 110-220 volt, 60-cycle, 1,725 r.p.m. motor, with special high-speed shaft extension. The gear case incorporates a phosphor-bronze worm gear driven by a heat-treated nickel alloy steel worm. The low-speed output shaft is supported on two roller bearings.

### Allen-Bradley Branch in Grand Rapids Moves

GRAND RAPIDS, Mich.—Local sales offices of the Allen-Bradley Co., Milwaukee, manufacturers of motor-control equipment, have been moved to 410 Houseman Bldg.

#### WARNING

#### General Rules for Safe Handling of Oxygen

##### 1. Don't USE OIL WITH OXYGEN.

The reaction when these two substances come in contact with each other is more violent than igniting dynamite! Keep oil or grease away from oxygen cylinders, cylinder valves and other equipment. Wash hands clean from oil before using oxygen apparatus.

##### 2. Don't CONFUSE AIR WITH OXYGEN.

Oxygen is one of several elements contained in air and should always be described by its proper name.

##### 3. Don't TEST FOR LEAKS WITH OXYGEN (except in pipe lines specifically made and cleaned for oxygen use.)

Use compressed air, nitrogen, CO<sub>2</sub> or some other inert gas that will not aid combustion. Pipes, pipe threads, and other pressure containers are usually greased or oiled for various reasons, and using compressed oxygen for the general purpose of testing for leaks is extremely hazardous and almost certain to cause a terrific explosion.

##### 4. Don't BLOW OUT PIPE LINES WITH COMPRESSED-OXYGEN.

Pipes are invariably oily from various causes and oil or grease should never be brought in contact with oxygen.

##### 5. Don't THINK THAT A SPARK IS NECESSARY TO EXPLODE OXYGEN.

The chemical reaction of having fuel gases and oils combine with oxygen is sufficient to develop spontaneous combustion and cause an explosion. (Pipe lines made specifically for oxygen should be thoroughly cleaned from oil, steel chips, etc.)

##### 6. Don't USE INFLAMMABLE SUBSTANCES NEAR OXYGEN

Oxygen itself will not burn, but will greatly accelerate combustion.

##### 7. Don't WEAR GREASY CLOTHES, GLOVES, ETC., WHEN WORKING WITH OXYGEN.

Oxygen will cause substances with merely a trace of oil or grease thereon, to burn with great intensity.

##### 8. Don't STORE ACETYLENE OR OTHER FUEL GASES WITH OXYGEN IN UNVENTILATED SPACE.

Never take the chance of having these gases meet by accident. A violent explosion may result.

##### 9. Don't STORE OXYGEN CYLINDERS AND APPARATUS UNDER MOVING MACHINERY, CRANES AND BELTS.

Oil or grease may drip and cause explosion and fire.

##### 10. Don't FORGET THAT AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE!

##### 11. Use ONLY APPARATUS AND EQUIPMENT WHICH IS DESIGNED, MANUFACTURED AND TESTED ESPECIALLY FOR THE PURPOSE INTENDED.

##### 12. Don't TAKE IT FOR GRANTED THAT THE CYLINDER DOES NOT CONTAIN OXYGEN.

Valves on cylinders containing oxygen for medicinal purposes have connections that fit CO<sub>2</sub> pressure regulators, but the contents should not be used contrary to these rules.

(These rules for the handling of oxygen are prepared by a company that has made oxygen cylinder valves and apparatus for more than 20 years, and who have a thorough appreciation of the dangers attendant to the use and handling of oxygen. For your own safety be at least as careful as these rules prescribe.)



KEROTEST MANUFACTURING CO.  
PITTSBURGH, PA.

U.S.A.



The above is a replica of the 8½ by 11-inch card sign with eyelet for wall hanging setting forth general rules for the safe handling of oxygen, prepared by Kerotest Mfg. Co. for use by refrigeration service men.

### Ermstat Appoints 7 New Jobbers

PHILADELPHIA—Appointment of seven new jobbers to handle distribution of the model "B" Ermstat overload motor protector has been announced by Ermstat Co. here.

The new jobbers are: Refrigeration & Power Specialties Co., San Francisco; Forslund Pump & Machinery Co., Kansas City; Home Appliance Service, Greensboro, N. C.; Refrigeration Service, Los Angeles; Odry Sutton Electric Co., Inc., Norfolk, Va.; Spangler Co., St. Louis; and Perry Metal Co., Brooklyn.

### Stern Forms Parts-Jobbing Organization in Hartford

HARTFORD, Conn.—Francis E. Stern, head of Stern & Co., Grunow distributor in this territory for many years, has formed a new corporation to handle refrigeration and electrical appliance parts, at the same address, 210 Chapel St. in this city.

Officers of the new company besides Mr. Stern, are: Perry S. Graffam, vice president and treasurer, and Miss Rose Beizer, secretary.

### AIR CONDITIONING and COMMERCIAL WATER COOLING (Coolers Only)

SHELL & TUBE TYPE  
1-100 Tons  
1-4 Compressors  
F-12—Methyl

STORAGE TYPE  
All Sizes

WATER FILTERS

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### Class 9100



Overload!  
REGULATORS

Meet Today's Requirements  
in Motor Protection for  
Commercial Refrigeration.

Ratings — 1 H.P. 110-220 V. A.C.  
½ H.P. 115-230 V. D.C.

Here are the Facts..

... The overload block is fitted to standard pressure or temperature regulators, single or double bellows types  
... the block is small—no added mounting or wire problem  
... all one compact unit  
... the relay is trip free and indicating  
... reset button provides manual "on and off"  
... the relay is of the melting alloy

type  
... heater coils as specified and available for field changes  
... double voltage wiring terminals  
... heavy brown Bakelite case  
... steel conduit flange  
... screw driver or knob adjustment.

Manufacturers, distributors, dealers—write for bulletin information on "Complete Control"—the 9100 regulator line for commercial refrigeration.

SQUARE D EVERYWHERE  
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REGULATOR DIVISION, DETROIT, MICHIGAN  
SQUARE D COMPANY, INC., LOS ANGELES, CALIFORNIA  
SQUARE D COMPANY, CANADA, LTD., TORONTO, ONTARIO

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DEPENDABILITY  
DURABILITY  
DIVERSABILITY

BUNDY TUBING CO.  
Detroit

## Utilities Place Liftop Models in Homes of Below-Average Customers on Trial Basis

CLEVELAND—Two large utility companies, New Hampshire Gas & Electric Co. in Portsmouth, and Eastern Shore Public Service Co. in Salisbury, Md., having recently completed a campaign to increase kilowatt hour consumption of below-average customers by placing the G-E Liftop refrigerator in homes on a trial basis, will make the plan a part of their 1936 programs.

Using this method, John Hopley, sales manager for New Hampshire Gas & Electric Co., found that the most effective way to sell such a customer is to hire salesmen who never before have sold electric refrigerators, train them on the Liftop story, and have them work in pairs.

Here is Mr. Hopley's account of the manner in which his salesmen worked:

"These men are given a number of cards containing names taken from the meter book, names of people who use less than 30 kwh. average monthly. The cards previously have been approved by the credit department and kept in order so that the calls are all on the same street or route. This routing makes it possible to contact a far greater number of customers than if the cards were made out hit or miss.

"Two Liftop models, two extension cords, some refrigerator lacquer polish and cloths are loaded into a small truck, and the salesmen stopping at the first card address inform the customer that they have brought her electric refrigerator.

"Of course the customer exclaims, 'I did not order an electric refrigerator.' To which the men reply, 'Yes, but Mrs. Jones, you would like an electric refrigerator, wouldn't you?' He then explains that she can now enjoy the benefits of electric refrigeration without cost.

"This meets with another exclamation, 'Without cost? Are you giving me one?'

"The salesman tells her he will leave the refrigerator in her home, without cost, except for the few cents used in operation, and that after a week or two, if she likes it, she can pay \$2 down and 50 cents a week with her monthly electric service bill.

"He further explains that the savings in food spoilage alone will more than offset the monthly cost of purchasing, while the cost of operation will be far less than the cost of ice, and the refrigeration superior.

"Given permission, the salesmen install the machine, clean and polish it, and give the necessary instructions.

"Three days later a home service call is made; 10 days later the salesman makes a re-contact. If conditions seem favorable he attempts to close the sale; if not he leaves it for another 10 days. A maximum of 30 days free trial is allowed."

The salesmen are given a weekly salary with a load-building bonus for each Liftop sold. If the customer wants a larger unit, the sale is turned over to a regular salesman, and if completed, the one who submitted the prospect's name gets a \$2 bonus.

This selling plan has been very successful from the start, and demonstrators installed have shown a high percentage of sales, Mr. Hopley says.

The Eastern Shore Public Service Co.'s northern division in Salisbury, Md., also used the G-E Liftop in its special drive to reach scattered rural territories on its lines as a means to increase current consumption among low-bill customers.

Using much the same system as the New Hampshire company, this utility selected the customers whose billings were between \$1.25 and \$2 a month. Refrigerators were put into the homes on a demonstration basis, followed up within a week, then either rented or removed.

The salesman was paid a fixed salary of \$100 a month with no extra commissions. He had had no experience in selling but was interested in sales work. A small, panel-body truck was purchased especially for his use.

During the four months and one week in which the experiment was carried on, 100 Liftops were rented, and two Liftops and 12 larger models sold. Total expense for demonstrating, and placing was \$662.23, which included car mileage; car expense, including depreciation and interest on investment; the salesman's salary; materials such as extension cords, sockets, attachment plugs; telephone calls; and in a few cases, labor to help deliver the machines.

Difficulty encountered at first in obtaining an interview, was practically overcome with a personal letter mailed three days in advance of the salesman's call requesting an interview.

W. W. Brown, Jr., sales supervisor for the company, said of the experiment: "We feel that, by putting these refrigerators in the homes of our low current-consuming customers, we are educating them to the greater use of electricity through our major appliances." The method will be inaugurated over the entire system of the Eastern Shore Public Service Co. as a definite part of its 1936 program.

## Electrification of Farms Shows 175% Gain During 1935

WASHINGTON, D. C.—With an approximate increase of 175 per cent over the previous year in the number of American farms electrified during 1935, Morris L. Cooke of the Rural Electrification Administration prophesies a new peak in rural electrification in 1936. The 83,000 farms to which electric service was extended in 1935 bring the total of farms having central station electric service to 827,000 out of a total of more than 6,800,000 farms in the country.

In Michigan alone, between five and nine million dollars to be spent on wiring and appliances has been named by Emerson R. Boyle, public utilities commissioner, as a probable co-investment in the 10,000 new rural homes electrified.

At the beginning of the new year, estimates were made that the two years ending Jan. 1, 1937 will see a total of 300,400 new rural customers, out of which 157,400 will have been added in 1936.

"We expect construction this year far in excess of the 1935 mileage," Mr. Cooke points out, "for we will have not only the increasing construction with private funds by the utility companies, which have been carrying the load, but the quickly growing activity by public bodies and co-operatives using their own or REA funds, which just got started in 1935."

Industry figures estimate a 50 per cent increase in rural line construction in 1936 over 1935. They indicate an approximate \$80,000,000 to be invested in rural line construction by private utilities companies in the two year period, of which sum approximately \$50,000,000 will be spent in 1936.

An \$8,000,000 program approved by the New York state public service commission will make available 6,000 miles of line serving 25,000 new rural customers.

The current boom in rural line construction has resulted in 20,282 miles of new rural line in 1935, according to *The Electrical World*, and it expects a further 31,664 to be built this year, making a total of 50,000 miles of new rural line in two years.

Estimated expenditures in 1935 by utility companies that have reported their construction figures to REA include: \$1,010,778 (nine months only) by operating subsidiaries of the American Gas and Electric Co. system; \$275,000 (ten months only) by the New England Power Assoc.; \$966,000 by the Consumers Power Co.; \$315,255 by the Alabama Power Co.; \$325,600 by the Georgia Power Co.; and \$170,000 by the Puget Sound Power and Light Co.

In 1936 planned programs for rural line construction include the following expenditures: Commonwealth and Southern Corp. system, \$4,376,628; Dayton Power and Light Co., \$502,652; Central Hudson Gas and Electric Co. system, \$898,000; Union Gas and Electric Co. system, \$696,044.

## McCoy Heads Conditioning Sales for Gunn Co.

LITTLE ROCK, Ark.—Fred D. McCoy has been appointed manager of the air-conditioning and commercial refrigeration departments of the Gunn Distributing Co. here. Mr. McCoy has had nine years' experience both in engineering and refrigeration.

## Sales Idea of the Week

By V. E. (Sam) Vining

I started punching doorbells in Detroit.

As I stood on the corner of Woodward Ave. and Boston Blvd., my future in my hands—or if you will—at the end of my thumb—my only conscious thought was—

I needed a cigarette.

I put my finger on the first bell—then again—and again. I listened carefully for the faintest stir inside the house. A glow of satisfaction came over me, a feeling of triumph, a realization of ambition reached and realized. There undoubtedly was—

No one at home.

I wasn't that lucky the rest of the day. I walked a hundred yards between houses and 60 yards back until 5 o'clock.

I ended up with the tireddest pair of dogs in Wayne County.

I had a better acquaintance with the maids of that neighborhood than the policeman on the beat—

One of them, even—

Winked an eye at me—

But;

I hadn't once talked to a housewife who had the power to buy anything or bowed to a butler who unbent, or found a maid who was willing to trade—the iceman's squeezin' for mechanical freezin'.

That night I talked to an old timer—

And;

The next day I went out on St. Jean Ave., where they build two-family flats on 30-ft. lots, where every doorbell ring—

Was answered by—

The Purchasing Agent of that family.

## New Transmitter for Station WSAI Nears Completion

CINCINNATI—A new and ultra-modern transmitter for radio station WSAI of the Crosley Radio Corp. will be completed here during this month, Powell Crosley, Jr., president, stated recently following word that the Federal Communications Commission has approved the application for the removal of the transmitter from Mason, Ohio, to this city.

The company intends, Mr. Crosley said, to provide better coverage for the city and its environs. The station transmitter will be located on Clifton Heights, a bluff overlooking the basin of the city.

New equipment will include a triangular single, vertical radiator type of antenna. It will operate on a daytime power of 2,500 watts with 1,000 at night, although licensed at 5,000 watts. The changing of the transmitter location will provide a more definite and clearer signal.

Joseph A. Chambers, technical supervisor of WSAI and its big sister station WLW, is directing construction.

## Broadcast of Cooking School Draws Crowds

MIDDLETOWN, Conn.—A weekly radio cooking school, originating in the G-E kitchen in the housewares department of Tompkin's department store here and broadcast over station WGN, has added to electric cookery popularity and increased sales prospects, report Rex Cole, Inc., sponsors of the project, and G-E distributor for this territory.

In the G-E kitchen, which has accommodations for more than 200 people, Miss Nell Snively, director of the Cole home service department, prepares seven or eight dishes and has them cooking or baking when the program ends.

A number of direct sales have resulted from the program, and utility economists report fewer service calls since Miss Snively has been incorporating in her talks instructions on the appliance used.

Dishes prepared are given as prizes at the end of the program, and Add-a-leaf recipe sheets containing the recipes broadcast the preceding week are distributed at the expense of the station.

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## MANHATTAN V-BELTS

Maximum strength and flexibility . . . Assured by original Manhattan construction—endless whiplash strength section fully floated in rubber and placed in the neutral axis area. Pretreated to minimize all inelastic stretch. Smoother operation—noise eliminated. One trial and you will always specify Manhattan.

THE MANHATTAN RUBBER MFG. DIVISION  
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## CURTIS

A Complete Line—59 Units

Fair Policy—81 Years' Successful Merchandising

Quality Workmanship—41 Years' Building Compressors

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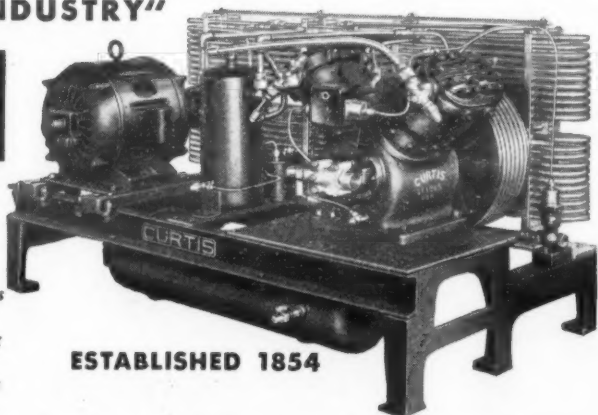
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Air View of Curtis 20 Acre Plant



Curtis is a well integrated institution, having its own gray iron foundry, brass foundry, machine shop, pattern shop, tool room, electric welding department, structural shop and power plant.

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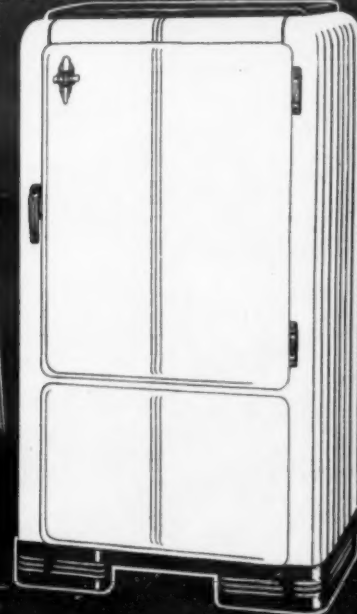
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## Sanitary SUPER SAFE with HYDROCOLD

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SPECIAL DEAL for EXPERIENCED SALES REPRESENTATIVES

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SANITARY ELECTRIC CORPORATION  
FOND DU LAC, WISCONSIN

## Patent Office Grants Freon Trade Marks

WILMINGTON, Del.—The United States Patent Office has granted to Kinetic Chemicals, Inc., the registration for a period of 20 years of a number of specific trade marks, covering the "Freon" family of refrigerants, propellants, and fire extinguishing preparations.

The specific trade marks granted are:

Trade Mark	Chemical Name
"Freon-11"	Trichloromonofluoromethane
"Freon-12"	Dichlorodifluoromethane
"Freon-21"	Dichloromonofluoroethane
"Freon-113"	Trichlorotrifluoroethane
"Freon-114"	Dichlorotetrafluoroethane
"F-11"	Trichloromonofluoromethane
"F-12"	Dichlorodifluoromethane
"F-21"	Dichloromonofluoroethane
"F-113"	Trichlorotrifluoroethane
"F-114"	Dichlorotetrafluoroethane

The trade mark "Freon" was registered a number of years ago to cover a group of fluorinated hydrocarbons, but because only one member of the group, dichlorodifluoromethane, was sold, the trade name was used to designate this refrigerant. Since several of the refrigerants are now on the market, the name "Freon" will be used to designate the entire group, and each refrigerant will henceforth be designated by the general trade mark and by its own number trade mark, i. e., "Freon-12," "Freon-11," etc.

The "F" series of trade marks is not extensively used by the company at present, but was adopted because of their extensive use in technical publications.

## Crosley Making Radios in Kokomo, Ind., Plant

KOKOMO, Ind.—Crosley Radio Corp. of Cincinnati has acquired a new unit for manufacture of radios and other products—the plant formerly occupied by the Haynes Automobile Co., of this city.

The building has been remodeled to fit the needs of the Crosley Corp.

The new Crosley plant is 900 feet in overall length, 500 feet of which are two stories in height. The whole plant is 75 feet in width. Production of radios here is now on a continuous line basis.

## Wehrly Forms Research Service for Business

NEW YORK CITY—H. D. Wehrly, former manager of the marketing and organization department of the Frigidaire Corp., has established a new type of business research bureau here for "marketing activities in the business field, and research in the governmental field."

Working on the premises that the need for conventional research for facts has been superseded by a need for workable ideas and programs that can be translated into improved distribution and increased sales, and that future business planning must take into consideration the changing economic aspect, Mr. Wehrly has built his Research Service.

**MCCORD**  
*Refrigeration*  
**PRODUCTS**

COMMERCIAL EVAPORATORS

DOMESTIC EVAPORATORS

CONDENSERS

METLFLEX ICE TRAYS

SPIRAL FINNED TUBING

AIR CONDITIONING SURFACE

MCCORD RADIATOR  
& MFG. CO.-DETROIT

## Patents

In this week's issue **ELECTRIC REFRIGERATION NEWS** resumes its digest of the report of patents issued each week by the U. S. Patent Office. Patents taken out which are of interest to the electric refrigeration and air-conditioning industries are illustrated, and their number and title given. Those interested in obtaining more complete information may do so by writing to the Patent Office.

Patents which have been issued since the first of the year will be covered two weeks at a time, until we catch up with the regular schedule which was broken by the unusual space requirements, for the announcements of new models and programs, in recent issues.

Issued Jan. 7, 1936

2,026,838. REFRIGERATING MEANS AND METHOD. Edward C. Koepke, Cleveland, Ohio, assignor to The Bishop & Babcock Sales Co., Cleveland, Ohio. Application June 10, 1931. Serial No. 543,254. 7 Claims. (Cl. 62-101.)

2,026,855. APPARATUS FOR PRE-COOLING REFRIGERATOR CARS. Henry T. Whyte, San Francisco, Calif. Application Sept. 26, 1934. Serial No. 745,571. 1 Claim. (Cl. 62-24.)

2,026,935. METHOD AND APPARATUS FOR CONDITIONING AIR. Charles R. Downs, Old Greenwich, Conn., assignor to Weiss & Downs, Inc., New York, N. Y. Application Aug. 17, 1932. Serial No. 629,121. 13 Claims. (Cl. 183-4.)

2,026,936. METHOD AND APPARATUS FOR CONDITIONING AIR. Charles R. Downs, Old Greenwich, Conn., assignor to Weiss & Downs, Inc., New York, N. Y. Application May 23, 1932. Serial No. 672,415. 29 Claims. (Cl. 183-4.)

2,026,974. AIR CONDITIONING APPARATUS. John Oliver Guffey, Arkansas City, Kans. Application May 15, 1935. Serial No. 21,650. 1 Claim. (Cl. 261-92.)

2,027,057. REFRIGERATION. Carl Georg Munters, Stockholm, Sweden, assignor, by mesne assignments, to Servel, Inc., Dover, Del. Application Dec. 6, 1933. Serial No. 701,123. In Germany Jan. 5, 1933. 91 Claims. (Cl. 62-118.)

2,027,092. COMBINATION RECEPTACLE FOR REFRIGERATORS. Alvis Yates Dowell, Hastings-on-Hudson, N. Y., assignor to Servel, Inc., New York, N. Y. Application Oct. 1, 1932. Serial No. 635,753. 12 Claims. (Cl. 62-141.)

2,027,094. METHOD AND APPARATUS FOR DEHUMIDIFYING AIR. Charles R. Downs, Old Greenwich, Conn., assignor to Weiss & Downs, Inc., New York, N. Y. Application April 6, 1934. Serial No. 719,248. 15 Claims. (Cl. 183-4.)

2,027,097. AIR CONDITIONING SYSTEM. Milton E. Hanson, Collingswood, N. J., assignor to B. F. Sturtevant Co., Inc., Hyde Park, Boston, Mass. Application Oct. 2, 1934. Serial No. 746,617. 1 Claim. (Cl. 257-7.)

2,027,106. ABSORPTION REFRIGERATING APPARATUS. Donald Branch Knight, Brooklyn, N. Y., assignor, by mesne assignments, to Servel, Inc., Dover, Del. Application June 20, 1932. Serial No. 618,102. 16 Claims. (Cl. 62-119.5.)

2,027,183. REFRIGERATOR. Carl E. L. Lipman, Chicago, Ill., assignor to Lipman Patents Corp., Chicago, Ill. Application July 30, 1932. Serial No. 626,300. 3 Claims. (Cl. 62-116.)

2,027,192. REFRIGERATING SYSTEM. Glenn Muffy, Scarsdale, N. Y. Application Aug. 17, 1931. Serial No. 557,476. 17 Claims. (Cl. 62-116.)

2,027,223. REFRIGERATING APPARATUS. Robert R. Candor, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp. Application March 28, 1929. Serial No. 350,682. 36 Claims. (Cl. 62-4.)

2,027,245. REFRIGERATING APPARATUS. James J. Nance, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp. Application Aug. 14, 1930. Serial No. 475,179. Renewed July 11, 1934. 14 Claims. (Cl. 62-4.)

2,027,313. REFRIGERATOR. Donald H. Gaston, Fort Wayne, Ind., assignor to General Electric Co. Application June 14, 1935. Serial No. 26,569. 10 Claims. (Cl. 62-116.)

Issued Jan. 14, 1936

2,027,372. APPARATUS FOR FREEZING MATERIALS. Sidney M. Davison, Annisquam, Mass. Application July 12, 1934. Serial No. 734,737. 24 Claims. (Cl. 62-114.)

2,027,505. BEARING SEAL FOR ROTARY SHAFTS. Carl J. Winkler, Indianapolis, Ind., assignor to Schwitzer-Cummins Co., Indianapolis, Ind. Application Oct. 29, 1934. Serial No. 750,398. 3 Claims. (Cl. 286-11.)

2,027,631. REFRIGERATION APPARATUS. Lee S. Chadwick, Shaker Heights, Ohio, assignor to Perfection Stove Co., Cleveland, Ohio. Application March 10, 1933. Serial No. 660,275. 25 Claims. (Cl. 62-120.5.)

2,027,665. BEVERAGE COOLING DEVICE. Joseph Askin, Buffalo, N. Y., assignor to Pedders Mfg. Co., Inc., Buffalo, N. Y. Application Oct. 24, 1933.

Serial No. 694,957. 2 Claims. (Cl. 62-102.)

2,027,754. ICE TRAY. Albert C. Smith, Larchmont, N. Y., assignor, by mesne assignments, to Servel, Inc., Dover, Del. Application July 28, 1933. Serial No. 682,543. 2 Claims. (Cl. 62-108.5.)

2,027,761. REFRIGERATION. Sigurd Mattias Backstrom, Stockholm, Sweden, assignor, by mesne assignments, to Servel, Inc., Dover, Del. Application March 5, 1935. Serial No. 9,362. In Germany March 7, 1934. 10 Claims. (Cl. 62-119.3.)

2,027,845. REFRIGERATING CABINET. William P. J. Speicher, North East Township, Erie County, Pa., assignor to General Electric Co. Application Oct. 31, 1933.

Serial No. 695,982. 2 Claims. (Cl. 62-99.)

2,027,927. ABSORPTION REFRIGERATION. Rudolph S. Nelson, Rockford, Ill., assignor to The Hoover Co., North Canton, Ohio. Application Oct. 6, 1933. Serial No. 692,366. 9 Claims. (Cl. 62-119.5.)

2,028,047. REFRIGERATION ICE TRAY. Arthur E. Cole, Grosse Pointe, Mich. Application June 19, 1931. Serial No. 545,518. Renewed Feb. 28, 1935. 6 Claims. (Cl. 62-108.5.)

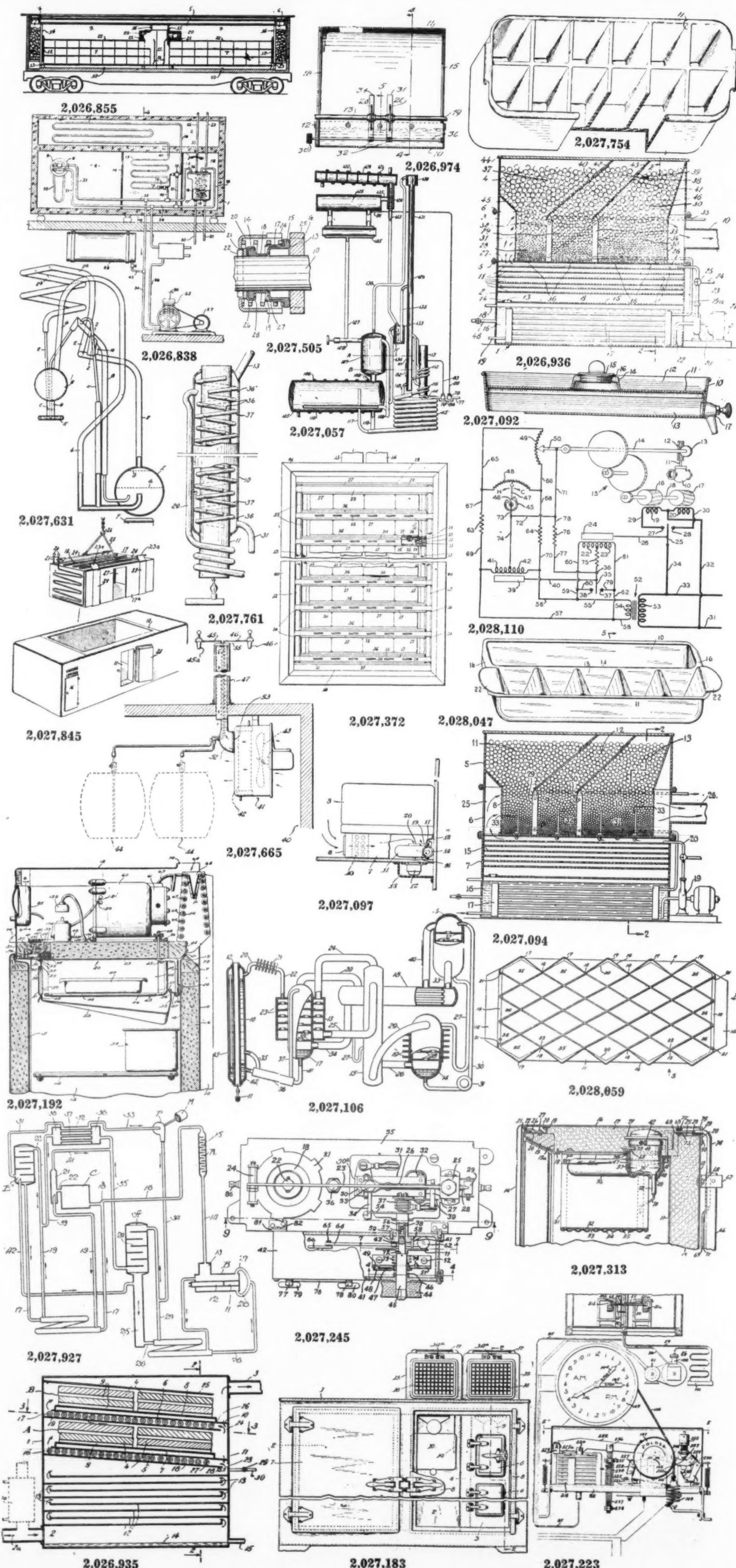
2,028,059. FLEXIBLE METAL FREEZING TRAY. Harvey D. Geyer, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp., Detroit, Mich. Application Feb. 16, 1933. Serial No. 656,989.

Renewed Feb. 25, 1935. 9 Claims. (Cl. 62-108.5.)

2,028,110. REMOTE CONTROL SYSTEM. Daniel G. Taylor, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. Application April 8, 1935. Serial No. 15,264. 16 Claims. (Cl. 236-74.)

## PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. Van Deventer (ASRE), Patent Attorney, 342 Madison Avenue, New York City.



# The Refrigeration Engineer's Manual

By S. L. Potts

## Effect of Temperature and Pressure on Gases

### Chapter 4—Compression Of Gases

#### Heat

Heat is the lowest or last form of energy, that is, all other forms of energy are converted into heat but usually at such low temperatures that it is impossible to use the heat for any further purposes and it is considered a loss or waste. Heat is produced by friction, but usually at low temperatures and is a loss or waste. Friction can produce very high temperatures but these we try to avoid. Heat may be said to be the ultimate or last form of all types of energy or is the ultimate or final form in which energy is lost.

Heat energy may be converted from one form to another very readily, but heat cannot be created or destroyed. It may be produced by chemical action, by work, and in many other ways.

When a volume of gas is heated and is free to expand, the temperature of the gas is raised, and the increased temperature will cause an increase in volume, or the gas expands against an external pressure.

To illustrate this, let the cylinder Fig. 40 be 1.13 ft. in diameter, which is just 1 sq. ft. area, and the piston is 1 ft. from the bottom end. The volume of gas in this cylinder is 1 cu. ft. The temperature of this gas is 70° F. and we raise the temperature to 200° F. What is the final volume of air in the cylinder?

Fig. 40 be 1.13 ft. in diameter, which is to be atmospheric and to remain constant. The changes take place in the temperature and volume. It is assumed for illustration that the piston weighs zero and the friction of the piston in the cylinder is zero.

#### Compression of Gases

In the handling of liquids and solids, the changes in volume due to pressure or temperature changes have been very small and in most cases has been neglected. In considering gases, the change of volumes due to change of pressure and temperatures, effect the volumes very materially, and cannot be neglected. The results must be understood in considering the compressor effect on the gases during compression.

#### Cylinder for Gases

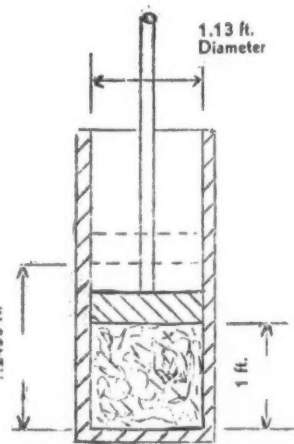


Fig. 40—Cylinder for compression of gases.

In Fig. 40, a known volume of gas (air) is placed under a constant pressure (atmospheric) and at a temperature of 70° F. the volume of this gas will increase 1/530 of its original volume for every degree rise in temperature, or it will decrease 1/530 of its original volume for every degree F. lowered. This fraction of 1/530 is the coefficient of expansion for air at 70° F. All other gases have practically the same coefficient of expansion as air.

#### Constant Pressure

Any perfect gas under constant pressure will increase or decrease in volume in direct proportion to the absolute temperatures of the gas.

Pressure constant,  

$$\frac{V_1}{V_2} = \frac{T_1}{T_2} \text{ or } V_1 \times T_2 = V_2 \times T_1$$

$$V_2 = V_1 \times \frac{T_2}{T_1}$$

This law holds practically correct

unless the gas is cooled near the condensing point or heated to a very high temperature.

#### Constant Volume

Instead of keeping the pressure constant as above, let the volume be kept constant. The piston is secured at the height of 1 ft. and the gas is heated. Then it is found that the absolute pressure will vary directly as the absolute temperature.

Volume constant,  

$$\frac{P_1}{P_2} = \frac{T_1}{T_2} \text{ or } P_1 \times T_2 = P_2 \times T_1$$

$$P_2 = P_1 \times \frac{T_2}{T_1}$$

#### Temperature Constant

Instead of constant pressure or volume, let the temperature remain constant and the pressure and volume free to change. To increase the volume by expansion, heat will have to be added to the gas; and to compress the gas, heat will have to be absorbed in order to keep the temperature constant. Compression of the gas heats it, expansion of the gas cools it.

When the temperature of the gas remains constant during expansion or compression, the volume of a perfect gas varies inversely as the absolute pressure.

Temperature constant,  

$$\frac{V_1}{V_2} = \frac{P_2}{P_1} \text{ or } P_1 \times V_1 = P_2 \times V_2 \text{ or } = \text{Constant}$$

$$P_2 = \frac{P_1 \times V_1}{V_2}$$

Any change in the pressure or volume of a gas at constant temperature is called an Isothermal change.

Let  $V_1$ ,  $P_1$ , and  $T_1$  represent the volume in cubic foot of 1 lb. of any gas (say air) at atmospheric pressure (14.7 lbs. absolute) and the absolute temperature of the gas at 32° F. is 460+32=492 which represents standard conditions.

Compress this gas from  $P_1$  to  $P_2$ , keeping the temperature of the gas constant at  $T_1$  and let this new volume be  $V_2$  which will be the temporary volume for the first step. Then

$$\frac{V_1}{V_2} = \frac{P_2}{P_1} \quad (\text{Step 1})$$

The second step is to keep the pressure  $P_2$  constant and remove heat from the gas until the volume returns to a volume represented by  $V_2$ . The original temperature was not changed in step 1 so it will be  $T_1$  at the start of step 2 but after removing heat, the new temperature will be  $T_2$  and we have,

$$\frac{V_3}{V_2} = \frac{T_1}{T_2} \quad (\text{Step 2})$$

This represents two separate and distinct changes of form from  $V_1$ ,  $P_1$ , and  $T_1$  to a new state of  $V_2$ ,  $T_2$ , and  $P_2$ .

Multiply the left-hand members of No. 1 and No. 2

$$\frac{V_1}{V_2} \times \frac{V_3}{V_2} = \frac{P_2}{P_1} \times \frac{T_1}{T_2}$$

Multiply the right-hand members of No. 1 and No. 2

$$\frac{P_2}{P_1} \times \frac{T_1}{T_2} = \frac{P_2}{P_1} \times \frac{T_1}{T_2}$$

Combine these and we have

$$\frac{V_1}{V_2} = \frac{P_2}{P_1} \times \frac{T_1}{T_2}$$

Multiply both sides of this equation by  $\frac{P_1 V_2}{T_1}$  and we get

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2} = \text{constant}$$

If we let  $R$  equal the constant in the above, we write it thus,

$$\frac{P_1 V_1}{T_1} = R \text{ for 1 lb. of any gas. The constant } R \text{ is usually referred to as the gas constant.}$$

If there is more than 1 lb. of gas to consider, then we have  $W$  for the number of pounds and the equation becomes,

$$\frac{P_1 V_1}{T_1} = WR \text{ for any weight of gas.}$$

$$\frac{P_1 V_1}{T_1} = WRT_1$$

$$W = \frac{P_1 \times V_1}{R \times T_1} \quad R = \frac{P_1 \times V_1}{W \times T_1}$$

These values will give the correct results as long as the same units are used all the way through. If using cubic feet of gas it is better to take the pressures on 1 sq. ft., if using the values in pounds per square inch pressure, the gas constant will change.

In order to determine the value for the constant  $R$  for any gas, the pressure temperature and volume in cubic feet for 1 lb. must be known. Taking air at sea level and a pressure (atmospheric) of 29.92 in. of mercury per square inch, or 2,116.8 lbs. per square foot, at 32° F. or the absolute temperature of 32+459.6=491.6° absolute temperature (say 492). The volume of air required to weigh 1 lb. is 12.39 cu. ft. From formula

$$R = \frac{P \times V}{W \times T} = \frac{2,116.8 \text{ lbs./sq. ft.} \times 12.39 \text{ cu. ft./lb.}}{1 \text{ lb.} \times 492} = 53.37$$

This is the gas constant for air. The specific volume for any weight of air at any pressure, temperature can be found from this equation

$$V = \frac{53.37 \times T}{P}$$

The values for other gases are directly proportional to the specific volumes of the gas compared to air.

The expansion or compression of gases under actual operating conditions takes place with changes in all three values of pressure, volume and temperature. This approaches adiabatic expansion or compression of gas and follows this law.

$$P_1 \times V_1^n = P_2 \times V_2^n = \text{constant}$$

Due to the fact that both pressure and volume have changed in this operation, the specific heat of the gas cannot be taken as either one. The value of the exponent " $n$ " is the ratio of the specific heats at constant pressure divided by the specific heat at constant volume.

$$\frac{C_p}{C_v} = n \quad C_p - C_v = \frac{R}{778}$$

$$P_1 \times V_1^n = P_2 \times V_2^n = \text{constant}$$

$$\frac{P_1}{P_2} = \left( \frac{V_2}{V_1} \right)^n \text{ or } \left( \frac{V_2}{V_1} \right)^n = \frac{P_1}{P_2}$$

All of the above formulas require logarithms for their solution.

$T_1$  is the initial absolute temperature of gas.

$T_2$  is the final absolute temperature of gas.

$t$  is the temperature of gas in degrees F.

$V_1$  is the initial volume of gas in cubic feet.

$V_2$  is the final volume of gas in cu. ft.

$P_1$  is the initial absolute pressure on gas pounds per sq. ft.

$P_2$  is the final absolute pressure on gas in pounds per sq. ft.

$p$  is the pressure absolute in pounds per sq. in.

$W$  weight of gas in pounds.

$R$  a gas constant. For air using values in pounds per sq. in.=.37. For air using values in pounds per sq. ft.=53.37.

(Concluded on Page 18, Column 3)

### Preceding Instalments Of Engineers Manual

Chapter I, starting in the Jan. 1, 1936, issue and continued in the Jan. 8 issue, explains the physical laws involved in the process of producing artificial refrigeration and the principal types of systems used. This introductory chapter also defines the terms and units of measurements used frequently in later discussions.

Chapter II, in the Jan. 15 issue gives a comprehensive survey of the characteristics of all the various chemicals which may be used as refrigerants, with the advantages and disadvantages of those most commonly selected in commercial practice.

Chapter III deals with compressors. The first instalment of Chapter III, published in the Jan. 22 issue, explained the function of compressors and the methods used in classifying them.

The second instalment of Chapter III, which appeared in the Jan. 29 issue, discussed the advantages and disadvantages of various types. The third instalment, appearing in the Feb. 5 issue, discussed pistons, piston rings, and suction and discharge valves.

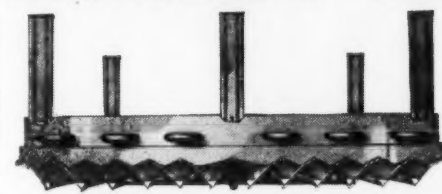
Chapter IV, the first instalment of which appears in this issue, explains the theory involved in the compression of gases.

THE REFRIGERATION ENGINEERS MANUAL will be offered in book form about May 1, 1936. Approximately 300 pages. Price \$3.00 per copy. The MANUAL in combination with a subscription to the NEWS costs \$5.00 if check is sent with order.

## The Buyer's Guide

Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

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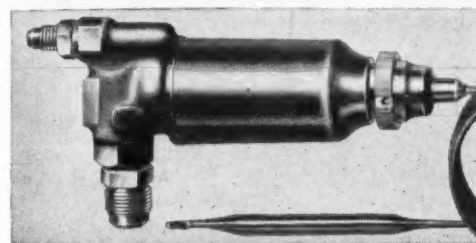
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### Refrigeration Instruments by Marsh



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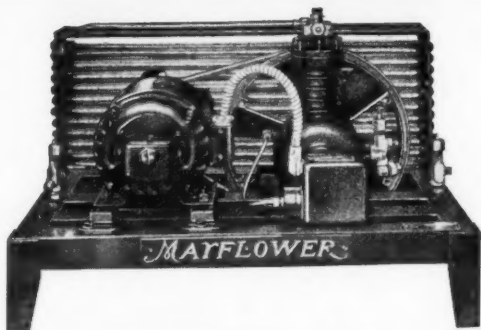
# The Buyer's Guide

Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

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## 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY

The REFRIGERATION LIBRARY... VOLUME 1

BUSINESS NEWS PUBLISHING CO. Publishers of ELECTRIC REFRIGERATION NEWS

The DIRECTORY (380 pages, \$3.00 per copy) is the industry reference book for all known sources of supply for refrigeration and air-conditioning products. Next edition will be published July 1, 1936.

Every sales executive should have the MARKET DATA BOOK (394 pages, \$3.00 per copy) for its compilation of sales methods and sales figures recording industry development to date. Next edition to be published Sept. 1, 1936.

Combination Price for Both Books, \$5.00

## 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA

The REFRIGERATION LIBRARY... VOLUME 2

BUSINESS NEWS PUBLISHING CO. Publishers of ELECTRIC REFRIGERATION NEWS

## Definition of Terms Used in Discussing Gas Compression

(Concluded from Page 17, Column 3)

Cp specific heat of gas at constant pressure.

Cv specific heat of gas at constant volume.

n ratio of specific heats at constant pressure divided by constant volume

$n = \frac{C_p}{C_v}$

Internal work of a gas is the heat energy required to increase the temperature of the gas.

External work of a gas is the heat energy used to expand the gas against the external pressure caused by the increase in volume of gas.

Specific volume of a gas is the number of cubic feet of the gas that will weigh one pound at any temperature and pressure.

Specific heat of gases—All gases have two specific heats, one is the specific heat at constant pressure, and the other the specific heat at constant volume.

Specific heat at constant pressure is the heat in B.t.u. required to raise one pound of gas one degree F. while the pressure is held constant.

Specific heat at constant volume is the heat in B.t.u. required to raise one pound of the gas one degree F. while the volume of the gas remains constant.

The specific heat of gases varies considerably at different temperatures.

True specific heat of a gas is the specific heat taken at the temperature at which the gas is under consideration.

Mean specific heat of a gas is the average value of the specific heat of the gas through some temperature range.

In going back to the formula for constant pressure, the volume of gas (air) was 1 cu. ft. at atmospheric pressure and 70° F. The pressure remains constant and the volume and temperature change. The final volume is

$$\frac{V_2}{V_1} = \frac{T_2}{T_1}$$

$$T_1 \text{ is } 460 + 70 = 530 \text{ degrees absolute}$$

$$T_2 \text{ is } 460 + 200 = 660 \text{ degrees absolute}$$

$$V_2 = 1 \times \frac{660}{530} = 1.2453 \text{ cu. ft. final volume.}$$

$$530$$

The external work done by this gas in expanding against atmospheric pressure is 14.7 lbs. x 144 sq. in. = 2116.8 lbs. per sq. ft. and the gas expanded moved the piston .2453 ft. Therefore the external work done by this gas in expanding and moving the atmosphere back is: External work done = 2116.8 lbs. x .2453 ft. = 519.251 ft. lbs. work.

In order to find the heat required raise the temperature of this cubic foot of air from 70 to 200° F. we have to find the weight of the air. This can be done by applying formula

$$W = \frac{P \times V}{R \times T}$$

$$2116.8 \times 1$$

$$W = \frac{53.37 \times 530}{14.7} = .07496 \text{ lbs. weight of}$$

$$53.37 \times 530^\circ \text{ air per cu. ft.}$$

The specific heat of air is .23751 to 2430 for constant pressure. The heat required to produce this increase in temperature is

$$\text{B.t.u.} = .07496 \times 130 \times .23751 = 2.314 \text{ B.t.u.}$$

The number of foot pounds of work equal to this heat energy is

$$\text{Ft. lbs. work} = 2.314 \text{ B.t.u.} \times 778 = 1800.292 \text{ ft. lbs.}$$

The total energy in ft. lbs. added to the gas is

$$1800.292 \text{ ft. lbs.} + 519.251 \text{ ft. lbs.} = 2319.543 \text{ ft. lbs.}$$

The total energy for external work is

$$2319.543 \text{ ft. lbs.} - 519.251 \text{ ft. lbs.} = 1800.292 \text{ ft. lbs.}$$

The total energy required for internal work is

$$1800.292 \text{ ft. lbs.} + 519.251 \text{ ft. lbs.} = 2319.543 \text{ ft. lbs.}$$

From this we see that it takes

$$1800.292 \text{ ft. lbs.} - 13.85 \text{ ft. lbs. of energy to raise}$$

$$130$$

one cu. ft. of gas 1° F. under constant pressure. The external work is nearly one half of the internal work.

In a gas, the cohesion (holding together) of the molecules is not perceptible at all, the particles can move about freely, the internal work only raises the temperature of the gas, and thus causes a more rapid and a greater vibration of the molecules. If the piston in Fig. 37 was held constant at 1 ft. height to hold the volume constant at 1 cu. ft., there would be no external work done (all internal) and the work energy required to raise the temperature of one cu. ft. of gas 130° F. will be 1281.041 ft. lbs.

1281.041 ÷ 130 = 10 ft. lbs. (nearly) of work energy to raise one cu. ft. of gas 130° F. under constant volume.

The heat required to raise 1 cu. ft. of gas 1° F. under constant pressure is always greater than the heat required to raise the same volume of gas 1° under constant volume.

This same value can be found in figuring the heat required to raise this same 1 cu. ft. of gas 130° F.

under constant volume. The specific heat of air at constant volume is .16902. The internal work done in raising 1 cu. ft. of air 130° F. is

$$\text{Ft. lbs.} = C_v \times W \times (t_1 - t_2) \times 778 =$$

$$.16902 \times .07496 \text{ lbs.} \times 130 \times 778 = 1281.041$$

The slight difference is in the decimals used.

(To Be Continued Next Week)

## Crosley Markets New Auto Radio Selling for \$39.95

CINCINNATI—A new 5-tube automobile radio, selling at \$39.95, has just been introduced by Crosley Radio Corp. It is equipped with primary vibrator tube that makes installations possible without internal changes.

New exclusive development with this set is the high-gain antenna system which greatly reduces the noise level.

The set is equipped with two remote control adapter panels, so that the user has the choice of mounting the control either under the instrument panel or on the steering wheel. In addition, a special adapter panel to fit in the glove box of several new model cars is available.

## Harbison Heads Baltimore District for Frigidaire

BALTIMORE—H. L. Harbison of the Frigidaire Corp., formerly in the Dayton district, has been recently appointed manager of the Baltimore district. He succeeds E. B. Dorsey who has been transferred to the management of the Minneapolis-St. Paul district.

A. L. Macmillan, formerly with the Barber & Ross Co. of Washington, and its Baltimore subsidiary, the Montgomery Electric Co., Inc., Kelvinator distributor, and more recently with the Baltimore branch of Southern Wholesalers, Inc., Kelvinator distributor, will also take over a position in the Baltimore Frigidaire district.

## Book Describes Laboratory Of Porcelain Firm

CICERO, Ill. — The modernistic Lusterite laboratory recently added to the plant of Chicago Vitreous Enamel Product Co. is the subject of an attractive 28-page booklet issued by the company.

A detailed description of the new laboratory, illustrated with a series of pictures, appeared in the Nov. 20 issue of ELECTRIC REFRIGERATION NEWS.

The booklet contains color reproductions of six divisions of the new laboratory, showing the unusual combinations and designs achieved in rooms where porcelain enamel has been used on wall and ceiling.

Black and white prints show the equipment installed in the laboratory. Copy describes laboratory equipment, personnel, and the process by which porcelain enamel is produced.

## French Concern to Handle Refrigeration Products

PARIS, France—The firm of Benkly & Roux has been formed here to act as manufacturers' representative for refrigeration and air-conditioning equipment and supplies, and household appliances.

George Benkly is an American mechanical engineer who has had considerable experience here in a similar line of work. Fernand Roux is a French merchant.

The firm will import from the United States exclusively, and will operate in France and its colonies. Three salesmen will work out of the headquarters at 21 Rue de Berri.

## Earnings

Stewart-Warner Corp.

CHICAGO—Net profit of Stewart-Warner Corp. for 1935 was somewhat in excess of \$1,700,000, according to preliminary figures, officials of the company indicated last week. This would be more than three times the net income of \$571,968 reported for 1934.

Sales for 1935 were approximately 20 per cent greater than in 1934. While the profit on Alemit fittings supplied to automobile builders was sharply reduced due to lower prices, others of the company's lines, notably refrigerator and radio, made a much better showing than in the previous year, which, combined with continued internal economies, made the increased profit showing possible.

The company's balance sheet at the close of 1935 shows cash of over \$2,000,000, it is understood, as compared with \$1,024,084 Dec. 31, 1934. Dividends paid during the year were in excess of \$600,000. The company has no indebtedness other than current obligations.

## 275 Kelvinators Sold By Unusual Methods Of Oil-Town Dealer

By Winifred B. Hughes

DETROIT—Two hundred and seventy-five sales in a town of 7,000 families, to people who in most cases have to build additions to their houses to shelter the refrigerator, is the sales record which Jack Avary of the A. & M. Furniture & Hardware Co. of Borger, Tex., has built up during the past year, reports O. A. Kennedy of the Amarillo Hardware Co., Amarillo, Tex., one of the prize-winning wholesaler men who attended the Kelvinator convention here recently.

"Borger is a small oil mining town where the people live in two or three room houses, and dealer Avary knows his customers and talks their language—but he's probably the most unorthodox dealer existing, as far as modern sales promotion methods go—he just doesn't use any!"

"He doesn't employ any outside salesmen, and does no canvassing—he gets the people when they come into the store, and sells them."

Model sales talk of this unconventional, but highly successful dealer goes something like this, Mr. Kennedy related:

"Listen, Bill, you need a Kelvinator out at your place, and I've got just the one you need. Now it'll cost you so much a day, and the down payment will be—say \$20, but we'll forget about that for now—you can pay it so much now and so much next week."

Most of the sales are made on the credit-plan basis, and although the income of the people is low, the A. & M. Furniture and Hardware Co., has made few repossession to date.

"There's no bank in the town, the nearest one is about 50 miles away—so Jack carries on his own financing operations. He didn't even have an accounting department until a few months ago. When I questioned him on this point, he'd always say: 'Well they know they owe me, and they won't forget.'"

Practically no advertising is used to promote refrigeration sales by this dealer, and although the store conducted a cooking school for Borger housewives a few months ago, Kennedy claims that it was a one-trial experiment as far as the dealer was concerned.

Clearing up the mystery as to why the people would put money into electrical equipment rather than into improving their homes, Kennedy explained that they knew they could always take the refrigerator, washing machine, and radio with them if the oil well played out—but they stand a chance of losing money put into more permanent structures.

Single contributing factor which this dealer has had in building up sales, is that ice is expensive in this town, while electric current rates are low.

"It's really cheaper for the residents to purchase electric refrigerators," Kennedy commented. "Playing up to this fact is about the one concession to sales strategy which Avary makes."

Another of the 67 Kelvinator dealerships that O. A. Kennedy contacts regularly is the Hillard Furniture Co., in Childers, Tex. In a three-month period this company has sold 90 refrigerators—but hostess schools, salesmen, and newspaper advertising have been used.

INFORMAL TALK NUMBER 37



## Your Chance Has Come With R-A-C-I Training

Lincoln believed that preparation—self improvement—created opportunities. And he proved it. Thousands of other men believe the same thing now—and are proving it every day. Golden opportunities surely await the man who prepares himself to meet the needs of the Refrigeration and Air Conditioning Industries—for both present and future activities.

Men who are interested in reaching the top in these great and growing new industries should write for details of the training officially endorsed and recommended by 30 leading manufacturers and supervised by their own factory engineers. No obligation. Write today.

The REFRIGERATION AND AIR CONDITIONING INSTITUTE  
2130-2158 LAWRENCE AVENUE • CHICAGO



The Official Endorsed School

## PURO ELECTRIC WATER COOLERS

Thoroughly reinforced all steel attractively finished cabinets.

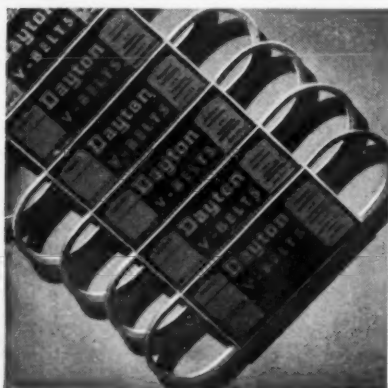
Different models of varying capacities.

Write for details and sales prices.

Puro Filter Corporation of America

440 Lafayette Street, New York City

Spring 7-1800



## THEY'RE DAYTON V-BELTS

● Silent, gripping transmission, year in and year out. No slipping... no twisting... no whipping. That's Dayton V-Belt performance. A nearby distributor can quickly supply you with Dayton V-Belts, especially built for all makes of electric refrigerators, washers and other appliances. Write today for price list and full information.

THE DAYTON RUBBER MANUFACTURING CO. DAYTON, OHIO

The World's Largest Manufacturer of V-Belts

## Classified

RATES: Fifty words or less, one insertion \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Electric Refrigeration News, 5229 Cass Ave., Detroit, Mich.

### POSITIONS AVAILABLE

IF YOU are calling on refrigeration jobbers and distributors, we have an extremely interesting deal, providing territory is open. We can assure you it will be well worth your while to drop us a line advising what territory you are now traveling and full information about yourself. Betz Corp., Betz Bldg., Hammond, Ind.

PERMANENT JOB for service man with Refrigeration Service Co., El Paso, Texas. No apprentices, floaters or bluffs. Must be fully competent, married (we furnish service truck), willing to be bonded. First letter must detail experience, employers for the past five years, brands specializing in, expected salary, age.

WANTED: Outside supervisors and experienced electrical refrigeration salesmen to sell Frigidaires and other appliances in Dallas, Texas Centennial Center, where there will be millions of dollars spent on business enterprises and new homes. Statistics show that more than one hundred thousand people will move to Dallas during the year 1936. Dallas led the United States in Frigidaire sales, according to population, for the year 1935. If interested, give full experience and references. Modern Appliance, 1403 Elm St., Dallas, Texas.

### POSITIONS WANTED

AIR CONDITIONING ENGINEER: Technical graduate. Experience: engineering all phases of air conditioning, buying and subcontracting, also sales. Now employed. When replying please be specific. Box 768, Electric Refrigeration News.

AVAILABLE: Nationally known radio manufacturer for whom I travel New England and northern New York has just given me special permission to add refrigeration, washer, air conditioning or allied line with which I am thoroughly familiar. Have splendid jobber and dealer contacts, excellent references and can sell. Box 764, Electric Refrigeration News.

EXPERIENCED refrigeration man desires work with large distributor or dealer but preferably with manufacturer or parts factory in Middle West. Excellent technical training. Experienced with general layouts, installation and servicing of commercial and household units, water coolers, etc. (Married.) Address H. H. Binder, 216 E. Lincolnway, La Porte, Ind.

### HERMETIC UNITS REPAIRED

GENERAL ELECTRIC SEALED UNITS—repaired, rebuilt, exchanged. Guaranteed service. Our modern shop is especially equipped to efficiently repair these units. Prices low and workmanship the best. Give model number when writing. Immediate service. Rex Refrigeration Service, Inc., 446 East 79th St., Chicago.

HERMETIC UNITS rebuilt or exchanged: Majestic all models \$17.50, Servel \$22.50, G.E. \$25.00 and \$32.50, other standard makes \$19.50. Majestic Hermetic Dome assembly \$12.50. Majestic standard compressors \$6.50, thermostat or cold control exchange \$2.50. Other prices on request. Six months' guarantee. Wholesale only. Refrigeration Products, Inc., 122 W. Illinois St., Chicago, Ill.

HERMETIC SEALED UNITS REBUILT and some exchanged; Majestics, all models, \$20, G.E. \$25 & \$32.50; Gibson sealed and open type \$20; Bohns \$20; all guaranteed; F.O.B.; other prices on request; wholesale only; prompt service. Standard makes of refrigerators complete, rebuilt and refinished like new, sold. We also export. We are in a position to represent for a

## HOW DO WE TRAIN MEN?



Exactly the way you want them trained, Mr. Executive

Utilities Engineering Institute's course of training in installing and servicing all types of refrigeration equipment was prepared with the cooperation of leading Engineers and Executives in the industry. We asked . . . "What training do you want your employees to have, to make them most capable and efficient?"

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We offer our services to those desiring either personal training or the services of trained men.

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404 N. Wells St. Chicago, Illinois  
1841 Broadway New York, N. Y.

few additional manufacturers' factory service in the Metropolitan area. New York City's largest service organization. Interboro Refrigerator Co., 350 Pearl St., Brooklyn, N. Y.

### EQUIPMENT FOR SALE

REFRIGERATOR DEALERS! Make money with Federal's reconditioned refrigerators. Approximately 1,000 nationally advertised refrigerators such as Frigidaire, G.E., Kelvinator, etc., completely remanufactured and rebuilt in our shops, the finest in the United States. Priced at \$30. F.O.B. Federal Refrigerator Corp., 57 E. 25th St., New York City.

DEALERS AND SERVICEMEN. Used refrigerators "As Is". Recondition, spray them yourself, save money. Kelvinators \$19.00, Frigidaires \$25.00, Copelands \$21.50, Servels \$19.00, General Electric, Mayflower, Electrolux, others, Frigidaire two-cylinder 1/4-h.p. units, with 2-tray float evaporators \$19.00 each. Pilgrim Refrigeration Co., 43-47 39th Place, Long Island City, N. Y.

CABINETS—Discontinued 1935 models—4, 5, 6 cu. ft. (net) capacities—bottom mount—high quality—attractive appearance—low prices while they last—also a limited quantity of factory seconds. Write or wire for specifications and prices stating quantity and sizes desired. Midwest Stamping & Enameling Co., Morrison, Ill.

### SERVICE

CHARGING VALVES FOR SEALED UNITS—Real money-making tools; you will now be able to service those refrigerators where service charges are highest. You can't afford to be without them if your living depends on service; order today; 20% deposit must accompany order (limited quantity). For G.E. (Monitor Top, etc.), \$12.50; for Westinghouses, \$12.50; for Gibsons, \$6.50; for Bohns, \$10.00; for Majestics, \$6.50; for Frigidaires, \$6.50. Refrigeration Research & Mfg. Co., 350 Pearl St., Brooklyn, N. Y.

## Questions

### Refrigerator Makers

No. 2671 (Distributor, New York)—"Would you kindly send us the names of the various manufacturers of domestic electric refrigeration?"

"We are interested in a distributorship for a territory we are now covering with commercial refrigeration."

Answer: Manufacturers of household electric refrigerators are listed on pages 235 and 248 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

### Counter Freezers

No. 2672 (Service Man, Alabama)—"Please send me the addresses of these manufacturers of counter freezers:"

"Sani-Speed freezers; Super Cold freezers; Champ Freeze freezers; Quick Freeze freezers; Knight Sani-Speed freezers; Sheldon freezers; Taylor freezers; Russ freezers."

Answer: Names and addresses of these manufacturers of counter freezers are as follows:

Sani-Speed freezers—Bastian-Blessing Co., 240 E. Ontario St., Chicago, Ill.; Super-Cold freezers—Supercold Corp., 1020 E. 59th St., Los Angeles, Calif.; Champ Freeze freezers—Champion Line Machinery Co., Inc., 278 Stewart Ave., Arlington, N. J.

Quick Freeze freezers—Burch Mfg. Co., 1906 Wyandotte, Kansas City, Mo.; Knight Sani-Speed freezers—Knight Soda Fountain Co., Division, Bastian-Blessing Co., 240 E. Ontario St., Chicago, Ill.; Sheldon freezers—Sheldon-Stewart Co., 408 Walbridge, Kalamazoo, Mich.; Taylor freezers—Taylor Freezer Corp., Beloit, Wis.; Russ freezers—Russ Soda Fountain Co., 5700 Walworth Ave., Cleveland, Ohio.

Other manufacturers of counter freezers are listed on pages 203 and 204 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

### Refrigeration History

No. 2673 (Manufacturer, Indiana)—"Will you please list sources from which a fairly complete history of refrigeration, with the emphasis upon the human interest side, might be prepared?"

Answer: We suggest that you refer to the article on "Development of the Electric Refrigeration Industry," by George F. Taubeneck, editor of ELECTRIC REFRIGERATION NEWS. This article may be found on pages 9 through 28 of the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK.

You might also refer to reviews of the news by Mr. Taubeneck on his "Personalities" page in the January issues of ELECTRIC REFRIGERATION NEWS in 1934 and 1935.

### Service Manual

No. 2674 (Service Man, California)—"I am in the refrigeration service business, but am only servicing ammonia machines. The other types are for outlating this type, and I find I shall have to change my style."

"A friend of mine was telling me that you had a manual on installing, operating, and servicing the so-called electric refrigeration."

"If you have this and other books

covering this matter kindly advise me as to cost delivered to me, also what is the subscription price of your paper?"

Answer: The MASTER SERVICE MANUAL, dealing with problems of installing, operating, and servicing all fundamental types of household electric refrigeration systems together with over a dozen "orphan" makes of refrigeration machines, will be ready for shipment this week. Price \$3.00 per copy.

The subscription price to ELECTRIC REFRIGERATION NEWS, which contains a great deal of service information each issue, is \$3.00 per year. We offer a combination rate of \$5.00 for both the NEWS and the MANUAL.

### Commercial Firms

No. 2675 (Manufacturer, Illinois)—"Please send us a list of manufacturers of commercial refrigeration equipment?"

Answer: Manufacturers of commercial refrigeration units are listed on pages 185 through 192 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

### Sales by Companies

No. 2676 (Power Company, Massachusetts)—"Kindly send us the standings of the refrigerator manufacturers as to the number of domestic refrigerators sold in 1935?"

Answer: We regret that we are unable to furnish you with the standings of the individual manufacturers as to the number of household electric refrigerators sold in 1935, as these figures are never made public.

However, an estimate of sales of household refrigerators during 1935, was published in the Feb. 5 issue of ELECTRIC REFRIGERATION NEWS.

### Purchasing Agents

No. 2677 (Manufacturer, New York)—"We have been informed you are in a position to furnish inquiries with the names and addresses of the various refrigerator manufacturers located in this country. We further understand most of these manufacturers use insulating asphalt in their manufacturing processes."

"Selling asphalt is our business, so we write to inquire if you could conveniently furnish us with the above information on the concerns listed below. We would also appreciate the names of the various purchasing agents, if such information is available:"

Electrolux, Hotpoint, Norge, Fairbanks-Morse, Gibson, Mayflower, Copeland, Stewart-Warner.

"If you could insert the full name of each of the above, such information also would be much appreciated."

Answer: An important part of our business is selling advertising in the NEWS, which offers the surest and most economical method of presenting your product to prospective buyers in the refrigeration industry. However, we are listing below the names of these manufacturers, together with the address and, if available, the name of the purchasing agent:

Electrolux—Servel, Inc., Evansville, Ind., A. L. Sager.

Hotpoint—General Electric Co., Nela Park, Cleveland, Ohio.

Norge—Norge Corp., 670 E. Woodbridge St., Detroit, Mich., Wm. H. McKigan.

Fairbanks-Morse—Fairbanks-Morse Home Appliances, Inc., 430 S. Green St., Chicago, Ill.

Gibson—Gibson Electric Refrigerator Corp., Greenville, Mich., H. Wilson.

Mayflower—Trupar Mfg. Co., 1331 Holden Ave., Detroit, Mich., P. A. Lovegren.

Copeland—Copeland Refrigerator Corp., 1331 Holden Ave., Detroit, Mich., P. A. Lovegren.

Stewart-Warner—Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago, Ill.

### Ditzell's Address

No. 2678 (Distributor, Massachusetts)—"I am very anxious to locate Mr. J. F. Ditzell, former sales manager of the Majestic refrigerator. I wonder if you would be good enough to check your files and let me know the last address you have on Mr. Ditzell."

Answer: Mr. Ditzell is the refrigeration sales manager for Stewart-Warner Corp., 1826 Diversey Parkway, Chicago, Ill.

### Leonard Refrigerators

No. 2679 (Jobber, Maryland)—"Can you advise us the name and address of the manufacturer of Leonard refrigerators? This information will be greatly appreciated."

Answer: Leonard Refrigerator Co., 14260 Plymouth Rd., Detroit, Mich.

### Key Specifications

No. 2680 (Dealer, Illinois)—"Enclosed find one dollar for four months subscription to ELECTRIC REFRIGERATION NEWS. Will you please send the back number that contains key specifications of General Electric and Kelvinator?"

Answer: General Electric key specifications appeared in the Jan. 1 issue of ELECTRIC REFRIGERATION NEWS and Kelvinator key specifications appeared in the Jan. 8 issue. Both of these issues are included in your subscription.

## The Buyer's Guide

Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

### KOCH COMMERCIAL REFRIGERATOR CABINETS

All types and sizes of heavily insulated refrigerators and display cases.

### WANTED—DISTRIBUTORS and SALES AGENTS

Attractive sales proposition. Some good territories available. Many exclusive features. Write for information, and submit your qualifications.

KOCH REFRIGERATORS, North Kansas City, Mo.



### Another Gloekler Achievement—

THE IDEAL REFRIGERATOR FOR SMALL RESTAURANTS, LUNCH ROOMS, BARBECUE STANDS, ETC.

A practical all-metal cabinet, white Du Lux, or porcelain finish—3" insulation—perfectly designed coil bunker—retained steel shelving—bright chromium hardware.

Originally a solid 4-door cabinet, the two top doors may be transferred to display type if desired, giving a shelf area of 9 sq. ft. Lower compartment, likewise equipped with shelves, has an area of more than 19 sq. ft.

The model 350 Cabinet has more storage space for its size—68" x 48" x 28"—than any other cabinet—and the price will surprise you.

Sold only through Dealers and Distributors

Write for complete catalog

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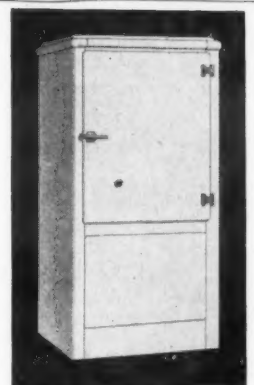
## STEELCRAFT REFRIGERATOR CABINETS

WE MANUFACTURE DISTINCTIVE FOUR AND SIX CU. FT. MODELS

WRITE, WIRE, OR PHONE FOR PRICES

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The price is \$3.75 shipped to you postpaid in the United States and Possessions and Pan-American Postal Union countries. For all Foreign countries postage based on a shipping weight of 6 pounds must be added to this price. Send your remittance with order. May we send you one?

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The Ring with a bearing face. A bearing for the ring against the cylinder wall.



Longer Life  
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